

Periodical  
TECHNOLOGY DEPARTMENT  
First Copy  
PUBLIC LIBRARY  
AUG 27 1923  
DETROIT.

# *The* AMERICAN RIFLEMAN

The Rifle 1885, Shooting & Fishing 1888, Arms & the Man 1906

VOLUME LXXI



NUMBER 6

*AUGUST 15, 1923*

What About the Man?

*By* Capt. W. H. Richard

The Physical Hazard

*By* G. Walter Booth

Square Bullets for Turks

*By* Capt. E. C. Crossman

Elephant Hunting in Uganda

*By* W. J. Morden

Hand-Gun History

*By* Roy C. McHenry

Handloading Ammunition

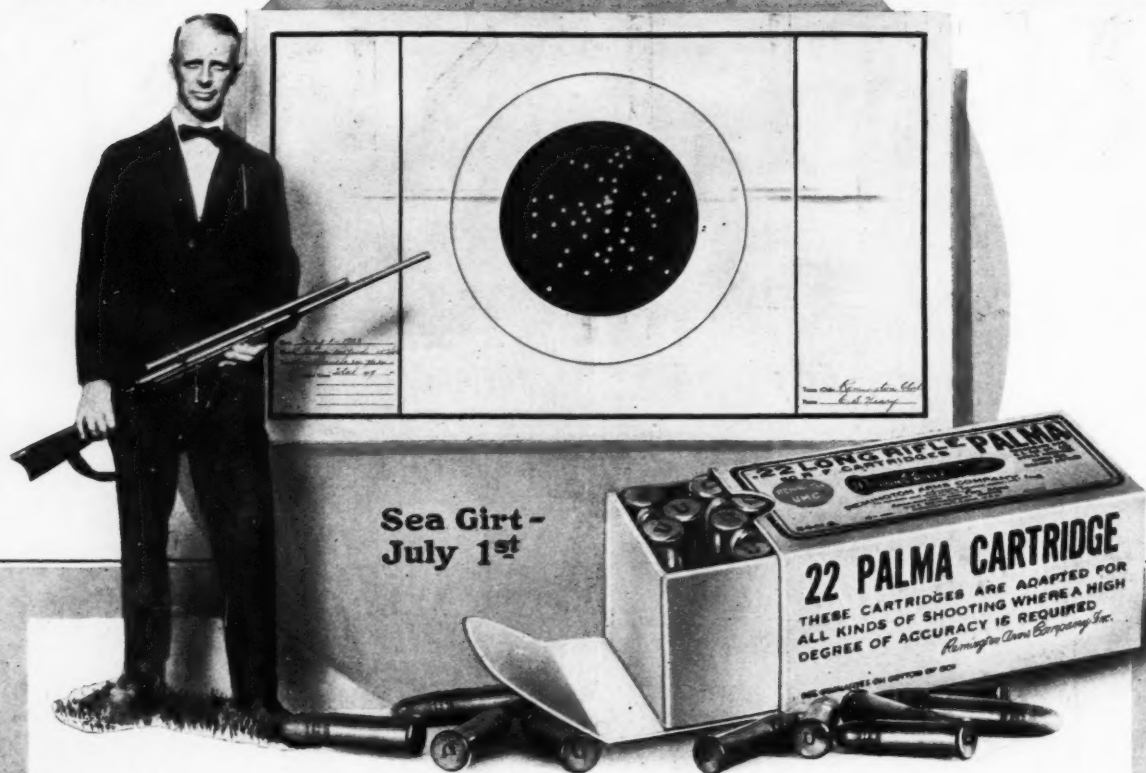
*By* J. R. Mattern

20 cents  
the copy

\$3.00  
the year



# New 200 Yd. Record!



This time it is a combination of **Remington Rifle** and **Palma Ammunition** which plays an important part in the making of a new record at 200 yards for consecutive bulls-eyes in an official match.

Mr. C. S. Neary of the Remington Rifle Team, Bridgeport, Conn., shooting in the Eastern Small-Bore Championship Matches at Sea Girt, N. J., on July 1st, made the possible for fifteen shots in the Palma Individual Match and continued in the Spencer Match, winning the match with the possible 100 and 14 extra, or a total of 49 consecutive bulls-eyes.

Forty-nine consecutive bulls-eyes at 200 yards in an official shoulder-to-shoulder competition is a noteworthy performance. It means that the shooter and his equipment must be right.

## REMINGTON ARMS COMPANY, INC.

ESTABLISHED 1816

NEW YORK CITY

The Authority in Firearms, Ammunition and Cutlery





T

of  
pos  
we

so  
of  
fac  
abo  
ins  
pac

sho  
sho  
sho  
are  
gu

etc  
ma  
Al  
pr  
hu  
ma

em  
in  
is  
an  
an  
wh  
sc  
co  
w  
fr  
sc  
m  
li  
su  
en

co  
ef  
te  
h  
so  
fo  
a



# The AMERICAN RIFLEMAN

The Publication of the National Rifle Association of America.

Vol. LXXI, No. 6

WASHINGTON, D. C., AUGUST 15, 1923

\$3.00 a Year. 20 Cents a Copy

## What About The Man?

By Capt. W. H. Richard

THE pages of our shooting magazines are filled with descriptive articles depicting the mechanical perfection which has been attained in the manufacture and design of firearms and ammunition of all calibers and for all purposes. It is not difficult for any one to choose a suitable weapon for his particular needs or fancy.

There is, however, another factor in the game that is not so generally discussed and which is just about as important of development as that of mechanical perfection. It is this factor that appears at the heading of this discussion. What about the man? Is the human, the man behind, getting the instruction and assistance which will enable him to keep the pace of improvement in the tools handed out to him?

By far the greatest effort—for the promotion of rifle shooting at the present time is along the lines of military shooting both small-bore and service, and it is this military shooting we have in mind though the things herein contained are equally applicable in hunting with the rifle, or with shotgun at the traps or in the field.

Our military text books, score books, firing regulations, etc., are complete with figures and rules set down for the manipulation of the rifle according to the ideas of the authors. All of them endeavor to tell the beginner how to become proficient but very few of them discuss why, or tell of the human element and how to fashion it into championship material.

This human equation in shooting or in any other line of endeavor for that matter, where the idea is to excel is nothing more than psychology. Psychology, Webster tells us, is "A systematic knowledge and investigation of the powers and functions of the mind." A psychologist goes further and divides the mind into many divisions, the main two of which being the conscious and the subconscious. The conscious mind, they tell us is located directly in the brain and contains the cold reasoning facts as registered through the windows of the eyes. The subconscious mind also emanates from the brain but finds its action in the ends of the nerves scattered throughout the body and controlling the muscular make up. It is this subconscious mind that contains all the little devils handed down to us by hereditary ancestors, the superstitions, doubts, fears, worry, and other spontaneous emotions that come upon us suddenly and cause trouble.

Controlled by the conscious or reasoning mind the subconscious becomes a smooth working director of muscular effort along the direct lines of least resistance and a protector against injury to the whole system. On the other hand, once let the doubts, fears and worries of the subconscious get to be the controlling force and disaster is sure to follow to both mind and body. The writer makes no claims as a psychologist, and if he were, this effort to put the idea

over to you would be couched in technical terms that few, if any of us, would understand.

First off, keep in mind that the man who is putting in his best effort to make the top in a shooting competition is under exactly the same fine nervous or subconscious strain as is the surgeon in performing a major operation, where a slip of the knife means failure, and it is the same old fear of failure suggested by the subconscious mind that bungles the job.

There are certain things which we can do to keep balance and poise under nervous tension and which we must do either consciously or unconsciously if we are to be successful, and that is nothing more or less than muscular relaxation. The muscular system requires frequent and complete rest from the drive of a nervous tension, and just remember this—a moment of relaxation, perfect and complete, is healthful and restful and cannot be replaced by any artificial stimulant.

Stage fright, or, in the shooters' vernacular, "Buck fever," is nothing more or less than a "night mare" in the daytime. It is the ascendancy of the subconscious mind over that of the reasoning or conscious mind and at once the whole system of mind and muscles are out of tune.

When you are peacefully asleep your entire muscular system is limp and at rest. It is recuperating to the point where it will have strength for the next drive made upon it. When you are relaxed in sleep you may be snoring but dreaming of pink mice, never.

Sometime when you find yourself under an extreme nervous tension try this: lie down on your back or any other position, just so you are all limp, and do not move even an eyelash for, say, ten minutes. You will certainly find that you cannot remain excited, scared, angry, or have any other tense emotion for half the above period.

Anyone who becomes physically fatigued through nervous excitement, and we all do, should, under such conditions, practice all the muscular relaxations possible. It is nothing but worry, and worry has ruined more special effort-men than any other cause. Any man who drives his muscular system by worry is in for an eventual breakdown.

We have in mind a purely muscular shooter, who at one time was considered one of the very best of the military rifle shots of the country. This man was equipped with a magnificent physique, weighing 220 pounds, was six feet in height and with a body beautiful to see. His strength was prodigious. When firing in the prone position the writer has seen this man literally twist and break a swivel off the rifle, the sling strap stretched and broke under the tension, while his shoulder usually wore a purple hue, not from the recoil of the rifle, but from the jamming of the butt stock against it. His theory of getting into shooting form was constant



#### PRONE POSITIONS

(From top to bottom)

No. 1—Take position with elbows forward in position where the hands can be placed under the chin in a natural manner as in the photo. The rifle will fit almost any man if he starts out in this posture.

No. 2—Note natural position in which the rifle drops into the hands without slung after lying prone as in figure one.

No. 3—Note the elbows well out as in cut one. The weight of the head on and against the stock. Look as nearly straight out of the eyes as possible. Relax and the recoil won't bother you.

No. 4—Nothing to do but wish 'em into the V. Rifle and man are as near of one piece as a man with a wooden leg.

and strenuous practice, eternally driving himself to still more muscular effort. There came a time, and that time when he should have been at his best, that old man worry took a hand in the game. Those splendid muscles driven by an unceasing fire of nervous tension refused to relax even in sleep. At a National meet he came to the condition where he would cry out in a troubled sleep or would lie awake worried by imaginary noises of the night, a victim to his subconscious fears and which would not, nor could not be allayed by muscular rest. That man could have given his powerful muscular system ten hours at the end of a cross-cut saw or with an ax, because of the fact that in such effort there would have been no mental hazard and no throwing out of gear the nervous system. Today he is a physical and mental wreck because of his failure to learn recuperation by relaxation.

On the other hand we had the pleasure of spending an evening at the home of a famous ball player, one who has been following that game long enough to see other great players come and go and who for the past five years has been the subject of many morgue hustlers' predictions. On the evening in question we watched this athlete as he poured himself into an easy chair in front of an open grate while he talked of past experience and of future possibilities. He seemed to be setting at ease from the back of his neck to the soles of his feet and we knew we were looking at the secret of his success and vitality. Having occasion to show something of interest in another part of the room, he arose silently, swiftly and without apparent effort; finished his errand and back again to his chair—grace in every motion and repose coming to him just as naturally. A veteran of many hard years on the ball field, giving even better than his best. At the time this is written his batting average is around 400 and in action he is a fighting tiger cat. Off the field he knows how to rest. His secret is relaxation—just that. Incidentally we might mention another celebrity of the same game who has reached the very pinnacle of fame, and on whom from present accounts old man worry has laid his clutching talons. Unless this man speedily learns the secret of his older rival he is through as a star actor in the game.

In the shooting game, big, bulging muscles are fine things to have, providing you do not use them, or at least learn when to let up in





#### KNEELING AND SITTING POSITIONS

Left—Weight well balanced and using as little effort as possible. The rifle butt is pressed in against the arm and shoulder junction by slightly dropping the right elbow.

Center—The "Jack Knife" sitting position. Comfortable and nearly as steady as the prone when mastered correctly.

Right—This sitting position is well adapted to rapid manipulation of the rifle. The photo, due to an angle of the camera, does not show well. The body should appear slightly more tilted forward into a perfect balance. Very good relaxation is to be had when this balance is acquired.



the body not less than 45 nor more than 60 degrees left angle to the line of fire or target; spread legs comfortably apart and with left elbow as nearly under the rifle as it can be placed, the hand should be backed right out against the sling swivel under the strap.

A good way to secure this prone position is to lie down at the above described angle without the rifle. Carry the elbows nearly straight ahead or on same alignment as the body, placing the chin in the palms of the hands. Then

if you will have the rifle placed in your hands as they swing outward from the chain, you will find you have assumed a very easy and natural prone position. Now take the same position with the sling about the upper arm and you have it.

their use. In training for a match it is well to live one day pretty much like another. A sudden change of living habits is a bad thing and excesses of any nature still worse. There is a tendency of almost everybody under a tense, nervous strain to overdo any little vices one may have. If you are a smoker, you will be inclined to add another smoke or two to your regular allowance under the competition strain. Don't do it. If you smoke, allow yourself the usual amount. Of course, in these days no one is supposed to take a drink so we need not discuss that, but the same rule would apply as to smoking. Do not overeat, get all the sleep at night possible and at all times relax your muscles at every opportunity, especially on every occasion where there is a nervous tension, such as awaiting your turn to shoot. Be careful of your eating. No man can do good work or be at his best with an overloaded stomach. Do your heavy eating at night after you are through shooting for the day. A light lunch at the noon hour of food that is easily and quickly digested and just enough to stay the uncomfortable pang of hunger is best.

From this point on we are going to take up position work, the idea being to describe to you the methods to employ whereby you will follow the lines of least resistance, which, after all, is the most expert manner of accomplishing any task.

**THE PRONE POSITION**—In this country our military and small-bore rifles are equipped with a sling strap and which is an authorized aid in target shooting. Some beginners do not believe in its use and do not consider that it is of any help to them. If you are one of

these, forget the notion and the sooner the better for you. The proper use of the sling will be of benefit to you even if you shoot without it after having thoroughly mastered it.

The sling should be adjusted so that the end of the loop will reach about opposite the forward end of the comb but will vary an inch or so according to the size of the man to be fitted. After this adjustment (if a right shoulder shooter) turn the sling a half turn to the left and slip the arm through the loop. Carry the loop just as high under the arm as it can be adjusted and pull the keeper taught, so the sling will remain put. Carry the left hand around the outside and then under the strap out near the sling swivel. Lay the stock in the fork of the thumb and hand low on the palm of the latter; back of the hand outward after the manner of a violinist holding a violin. Lie down flat on the stomach with

Another thing to which attention is called is that the rifle butt does not rest in on the collar bone in this position, but on the junction of the heavy arm and shoulder muscles. The rifle butt can be placed at this point by simply dropping the right shoulder backward a bit, the rifle placed in position from underneath the arm pit.

Many army instructors have their men grasp the butt plate with the right hand and by turning on the left side swing the piece in on the shoulder. This is lost motion, unnecessary and uncalled for. With the elbows well forward the piece may be easily set against the arm and shoulder junction.

If the alignment is not correct with the target, a slight squirm backward on the stomach will align it wherever wanted.

Now, then, here is the main point of this position and one which will readily be noted when the proper position is attained. When



#### SOME OFF-HAND POSITIONS

(Left to right)

The whole arm position. Few riflemen use this position today, but it was a favorite in the days of the long-barreled muzzle loader.

The half arm and a strictly off-hand position. This the hunters' favorite and is used for all standing or running shots. Given a five-second target and this position, training would do a fellow some practical good.

The hip rest. The steadiest of all the off-shoulder positions. Throw the gun as nearly across the chest as possible.

This is the position wherein the elbow is tabooed from touching the body or hip. It is uncomfortable and no wonder one looks cross while using it. The upper arm is more than a little influenced by a thumping heart. When this came in they increased the size of the 200-yard bull.

the weight of the head is laid against the stock the rifle butt will push slightly outward against the arm and which will bear the weight of the head without slipping downward. The weight of the head will push the rifle outward, taking up the tension on the sling and the pull of the sling will be gently upon the upper left arm. If the muzzle is too low, squirm backward on the stomach without removing the weight of the head on the stock or moving the elbows. When you have the rifle hung on the target rather than held, fill your lungs with air, noting how the muzzle of the rifle will depress. Slowly exhale until the sights are aligned where wanted then RELAX every muscle in your body except the

These examples of the Off-hand position were posed by Capt. W. H. Klehard, of the Winchester Co., the author himself, a famous shot.



not along the small of the stock. Show the world that you are not afraid of the rifle. Yes, we know that many instructors tell their beginners to "put the thumb along the stock or it'll kick your nose off," and right there they instill a fear of the rifle into the beginner that is going to take many a day for him to overcome. No man who learns the prone position correctly need fear the recoil no matter if his thumb is along with or over his nose. Remember what has just been written about the recoil being taken up by the left forearm.

One of our friend, Col. Brookhart's famous "ten commandments" of the firing line was one which read, "Butt hard against shoulder." We feel sure that if the Colonel were to revise those commandments he would omit that particular number for the reason that there

trigger finger from the second joint outward. If you are relaxed you won't move, neither will the rifle. Do not grasp the rifle tightly with either hand and with the forearm of the left arm acting as a fulcrum over which you are weighting the rifle well out to the sling swivel, you are taking just about 90 per cent the recoil on that same left forearm and thus the recoil from the heaviest loads becomes negligible.

Another thing. Grasp the piece with the right hand in a neutral position; that is, with the thumb over,

never was any excuse for jamming the butt against the shoulder, neither by recoil or in any other way.

Here is another idea in which we are going to take issue with a good many shooters but

(Continued on page 18)



# The Physical Hazard

By G. Walter Booth

*I am growing old and older every year,  
And I see my finish clearer every year,  
My gray hairs are growing thicker  
Less capacity for licker  
And I'm more and more a kicker every year.*

THE above rhyme applies more and more painfully to a lot of us. And as time goes on it is going to apply to every man jack of you who peruse this epistle. A good deal has been said about the psychological hazard in rifle shooting. It is pleasant to talk about this because the cure for it is painless and involves no great amount of self sacrifice. The physical hazard, however, is greater than the psychological hazard, and the remedy involves no end of self sacrifice and attention to petty details.

Now that our nation has legislated itself "bone dry," we need have no further cares as to the effect of alcoholic liquor upon our shooting. Of course none of us will ever again have occasion to know whether the demon rum has any effect on our scores. Of course not—matches being usually held in Sunday Schools and W. C. T. U parlors. Nevertheless, just for old sake's sake—just that the younger generation may know how this same little red demon used to waggle the muzzle of the gun about, we will tell some of the effects observed many long years ago, when a bottle of Scotch might be found in the ice basket with the Ginger Ale, or the old keg reposed in the corner of the club house under a large cake of ice.

The observations herein related were not made and recorded to justify any stand either for or against the use of alcohol or tobacco. One of the major controversies among riflemen, ever since the writer has been old enough to know anything about controversies, has centered about the use of the good old Jimmy Pipe, the Coffin Nail, and the Joy Water. We are neither trying to justify the use of these things, nor to condemn their use. Our own personal experience, backed by careful notes taken over a period of a number of years, tends to indicate that stimulants and sedatives both have an effect upon a man's holding. Obviously, the effect of these things varies with the man as well as with the quantity consumed. It is our personal opinion that a small amount of alcohol taken in a form that is not bulky, benefits the score of a steady drinker, has but little effect upon the score of a moderate drinker, and has a slight deleterious effect upon the total abstainer. We have selected merely types, which we have designated as Man No. 1, Man No. 2, and Man No. 3. The fact is that a number of people were tested, and our men referred to here are composites. This is particularly true as to the total abstainers, one of whom was a woman. The sex of the shooter, however, in our opinion, has nothing to do with the mani-

festated effect. As is elsewhere observed, the size of the individual has more to do with it than anything else.

Regardless of the fact that a cigarette or a pipeful of tobacco will increase the blood pressure, the opinion of the writer is that a little tobacco smoke, if a person is used to smoking, has very little effect, if any, upon the score. If there is any such effect at all, we think that the score will be slightly improved. However, this improvement, in our opinion, is more of a psychological manifestation than a physical reaction. The quiet contentment and satisfaction of a smoke, although it undoubtedly has a slight sedative effect upon one's nerves, has a tendency to tone up and steady the shooter, if, as before mentioned, he is accustomed to the use of tobacco.

The psychological effect, however, of all of the experiments herein related is not discussed, largely for the reason that we hope to deal with this phase of shooting in a subsequent article.

The experiments hereafter related were conducted by the writer and Captain George M. Logan, M. D., late of the medical corps of the U. S. Army. Several shooters were experimented upon, including the writer. In fact, so willing were the victims that there was hardly enough experimental material to go around. We selected three men. First was the almost total abstainer; second was the type of man like the writer, who is so unfortunate as to be unable to obtain very much experimental material, but when he can obtain it leaves nothing to be desired in its consumption; and third was the type of man who is more fortunately situated, by reason of opulence or foresight, in having a well-stocked cellar.

It is probably well to state in starting that the total abstainer weighed but 118 pounds. The writer weighs 200 pounds, and the third shooter weighs 140 pounds. The respective sizes of the individuals have a slight bearing upon the effect obtained with whiskey and tobacco. Theoretically beer should have had a similar effect; and the larger the man the slighter the effect should have been. It takes a larger quantity of any sedative or stimulant to affect a large person than a small person, speaking generally. Our results, however, showed that the frequency with which the individual uses stimulants or sedatives is a larger determining factor than the size of his body.

First two strings of ten shots were fired by each individual. These shots were fired after a few practice and sighting in shots had been fired. These strings were ten shots with a .22 caliber long rifle cartridge at 75 feet, and ten shots at 200 yards with a .30 caliber 1903 Springfield with 34 gr. pyro D. G.

powder back of 150-grain bullets. I mention the latter load specifically because it was somewhat lighter, both as to powder and bullet than some of our new loads, and I think this may have had something to do with the variations from the normal. Had up-to-date loads been used, the recoil from the Springfield would have been slightly greater, and again the new loads might have been a trifle more accurate. This last factor, however, I would consider negligible at 200 yards.

We will call the steady drinker Number One, and the moderate drinker Number Two, and the total abstainer Number Three. A pint of beer had no apparent effect upon the blood pressure of any of the individuals five minutes after it was administered. An ounce of whiskey, however, decreased the blood pressure of Number One from 150 deg. to 138 deg. This was a surprise to all of us. It decreased the blood pressure of No. Two from 130 deg. to 123 deg., which was an even greater surprise. With No. Three, the total abstainer, the blood pressure jumped from 112 deg. to 120 deg. This is what we all expected. These readings are on what is called the systolic scale. The diastolic readings, however, increased, with man No. One, from 80 deg. to 90 deg. after the administration of the whiskey, and with No. Two from 68 deg. to 74 deg. With No. three, the total abstainer, however, there was a decrease from 80 deg. to 78 deg. The practical effects of the whiskey showed in a reduced score on the part of the total abstainer, but little change in the score of the moderate drinker, and an increased score on the part of the steady drinker. The grouping of the shots was even more informative than the score, for the steady drinker showed the best grouping he made all day just after his first drink.

No respiratory or gastronomical effects were in evidence, although the Doctor kept a very careful watch for any such manifestations.

Although no blood pressures were taken, the shooting continued for two hours with the subsequent administration of two ounces of whiskey to the total abstainer, and three ounces to the occasional drinker, and six ounces to the regular drinker. In each case at the end of two hours there was a marked inability to hold the gun steady and make a creditable score. It is difficult to say from our tests what the relative effect was to each of the shooters; but unquestionably the total abstainer was seriously incapacitated by his total of three drinks. The occasional drinker was less incapacitated than the total abstainer; but the steady drinker was less influenced than the occasional drinker. The steady drinker shot better after the first and second drinks than without any alcohol, but he shot

(Continued on page 18)

# Safari Days

By W. J. Morden

## Elephant Hunting In Uganda



I THINK there is no other animal which gives one such a sense of unlimited power as an elephant in its own forest. I used to think that a bull moose, tearing through the trees and bushes, was the finest sight I could imagine, but it does not begin to compare with a big elephant. They are amazing brutes, for withal they look so clumsy, they can turn like a polo pony and can make a speed that is astonishing. They go through a dense forest, where a man has to crawl most of the time, as though it were nothing at all. A man hasn't a chance to make a get-away by running. He can only dodge to one side and stand as quietly as possible.

An elephant has the finest sense of smell of any of the animals, and uses his trunk constantly to test the air. His hearing is apparently not so good and, contrary to the opinion of one of the oldest elephant hunters in Africa, my own experience makes me think that his sight is not good either. I was within thirty yards of two big bulls out in the open, with not a particle of cover between them and me. They were standing quietly, looking in my direction but, apparently, had no idea that I was in the neighborhood. I was not standing still all the time either, but was working around to get into a good position for a shot. They did not show the slightest alarm until a puff of wind carried our scent to some ten or twelve cows about fifty yards beyond. The cows first put up their trunks, feeling the air. Then the whole lot stampeded, fortunately in the opposite direction. I got a long range, running shot at the bull, which made him wheel, but he got away.

During our three weeks in the Chopi country, in Uganda, we got to within ten or fifteen yards of a good many elephants. The neighboring natives told us we were about three weeks too early, as the grass was mostly burnt off, and, as the rains had not yet come, the elephants were almost all in the forest,

there being little food for them in the open country. We found that to be quite true, as each time we got onto the spoor of elephants, it lead into the forest. Hunting them in the open would have been comparatively easy, but trailing them through the underbrush of tropical forests where it was impossible to make much headway except along the trails or aisles made by the animals themselves, was not only a bit "nervy," as the Britishers say, but was also darned hard work. We would start out from camp each morning at dawn, the local savages acting as trackers, we following with our gun-bearers and usually a porter or two carrying food and water. Sometimes we would come on fresh spoor within half an hour of camp, but this was rare. Some days we found nothing at all that was worth following. The going was not too bad until after the sun had been up for an hour or more, but after that it began to get hot.

We would usually follow a native trail out from camp for a time, until it was crossed by fresh elephant spoor. Our native hunters were wonderfully good at telling the age of a track and whether it was made by bull or cow. They could also tell whether the "funt" was feeding quietly along, or was travelling. If the former, we would start on the trail at once. But if the latter there would be small chance of our coming up with him, as they go long distances at a speed that a man can not hope to equal. The trail or spoor of an elephant is marked not only by great, round foot prints but by broken saplings and partly chewed twigs and branches on which he has been feeding. By the condition of these the tracker can tell very closely how far ahead the animal is.

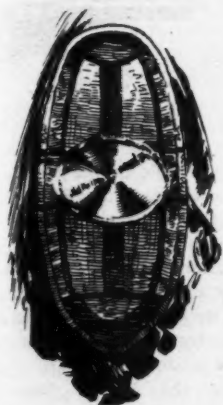
Usually the trail led us almost immediately into the forest, where, after threading our way for a long time through the winding lanes made by the funts, we would hear distant crashes. These were made by the animals as

they tore the leaves and sometimes large branches from trees, or when in moving they pushed over a tree. It is an amazing sound. Locating the game by these sounds, we began a careful approach. The head tracker carried a small bag of banana leaves, filled with fine white wood ash. As we got nearer to the elephants, he shook this, and the ashes, drifting out on the air, showed the direction of the wind. Try as we would, it was not possible to be absolutely quiet, as the ground was covered with dead leaves which crackled underfoot in a most disconcerting way.

The elephants seemed not to mind us, however, when the wind did not carry our scent to them. When, as happened on some occasions, they did get our wind, they first raised their trunks high in the air, waving them slowly about to catch the alien scent. Then they dashed off, crashing through the jungle, snapping off good sized trees as though they were saplings. Sometimes they became suspicious, and moved off so quietly that we did not know they had gone until, away in the distance we heard them again. I have known them to stand motionless, not making the slightest sound.

We came unexpectedly on one or two while they were thus standing and I shall never forget the thrill I got. One, which we had chased for hours through the forest, out into the open and back again, was an interesting example of animal intelligence as shown under pursuit. Or perhaps I should say, of elephant intelligence. For after getting well out of range, this funt doubled quietly back, almost on his own tracks, and when discovered, was standing perfectly still, quite near, and watching us. The first three of our party had crept past without seeing him, when something caused me to raise my head. There he stood, not over ten feet away from the path we were following, his trunk waving slowly to and fro, his little pig's eyes alert. He had tremendous bulk. I thankfully noted





Above—Elephant shot by W. J. Morden, Chopi District, Uganda.  
Below (Left)—Native bearer with elephant ivory.  
Right—The Memsahib with trophies of the chase.



that there was a big tree beside me that I could step behind in case of trouble. I tried to see what kind of ivory he carried, at the same time making frantic signals to the others. Unfortunately his tusks were not good, so we made a quick and quiet get-away, and left him standing motionless, with his trunk held out in our direction.

During our hunting we got close up to quite a number of elephants, close enough to have all the thrills of the chase except the actual shooting. But when the ivory proved too poor to justify a kill, we would turn back, using quite as much caution in our exit as we had to use in our approach.

My first elephant I shot on the hardest day's hunting I have ever had. We were to make a trek of about two hours and a half, one day, moving camp to a neighborhood where elephants had been making much havoc

in the native shambas. Mrs. M——, whom we always called the "Memsahib," decided only to trek to the new camp, but Mr. Percival, our hunter, and I made the distance in good time, and pushed on to the village beyond. The distance covered took another hour and a half, making a good ten miles, a fair trek in a country like Uganda, where the sun grows intensely hot about eight o'clock in the morning and throughout the mid-day hours is well-nigh unbearable. When we arrived at the crude little Bunyora settlement, we found the natives much excited. A woman had just been chased from the open pathway between her hut and the banana patch which she was tending, and the night previous a large herd had raided the field nearby, and had done much damage. As it was still considerably before noon, we told the guide to lead on to where the elephants had last been seen. This

proved to be about three miles from the village. There we found the fresh spoor of elephant, among the lot being tracks of one much larger than the rest. They measured about twenty-six inches in length, and about twenty-two inches in width. We followed the huge tracks into the forest, apparently getting closer to the animals all the time. Noon came on and the sun grew hotter and hotter. Now and then we would hesitate long enough to take a mouthful of water from our canteens, but there was no time to rest or eat. We were too close to our game to risk its loss through lack of effort. So we hurried along as fast as the difficult going and the necessity for caution permitted. At last we heard crashes in the forest which told us that we were closing up on the funts. Very carefully we stole ahead, pausing every little

(Continued on page 19)



# Hand-Gun History

By Roy C. McHenry  
Part 2 - "Johnny Colt"



COMPETITION of a sort began before the Colt factory at Paterson was scarcely in running order. A man named John W. Cochran, who had been making the long "leg handled" under hammer pistols which had their vogue at that time, obtained a patent for a revolver with a cylinder having a vertical axis around which it turned like a turret on a battleship. Some of the chambers were thus pointing in the direction of the shooter or nearly so, naturally causing an uncomfortable feeling in the pit of the stomach, when he pulled the trigger. Still, some of the hairbrains who will try anything once were induced to purchase them.

Then there was the Leavitt revolver, on which a patent was obtained in 1837. D. Leavitt, the inventor, was very modest in his claims, which only covered a convexed for-

## ACKNOWLEDGMENT

THE author desires to acknowledge with thanks the assistance rendered him in the preparation of this article by the Colt's Patent Fire Arms Manufacturing Company and Smith & Wesson, who have furnished him with much valuable data and several illustrations, also to Dr. L. R. Brady and Messrs. J. C. Harris, M. D. Frisbee, C. F. Middlebrook, and E. A. Dodge, who have loaned him pieces from their collections to supplement his own.

ward end on the cylinder, designed to deflect the flame of the explosion and prevent other chambers from being set off. The mechanism wasn't much of an improvement over that of Elisha Collier's, or that of Henry VIII's revolver, for that matter, for the cylinder was revolved by hand, with a thumb catch to release and stop it. Wesson, Stevens & Miller, gunsmiths of Hartford, manufactured it, and the senior member of the firm was Edwin Wesson, an elder brother of Daniel B. Wesson, of the later firm of Smith & Wesson. Quite a number of the Leavitt revolvers were made with an extra long barrel and a skeleton stock was fitted to them, making a nice little arm to tuck under the seat of the buggy, in case you came upon a deer while on a drive.

In January, 1837, the Senate passed a resolution directing that a competitive test be made of the Colt, Cochran and Leavitt revolving arms, the breech-loading single-shot rifle invented by John A. Hall, in 1811, which came into the world as a flint-lock and now had reached the percussion stage of development, and two mysterious weapons, one known as the "Fusil Robert" and the other the Fisher gun, about which little is known at

present. The trials came off at West Point in March of that year. The officers who conducted them were old fogies who had seen their best days during the War of 1812 or earlier, who could not be made to see that the flint-lock musket was not the height of perfection in firearms. Their chief objection

revolving musket, a rifle of the same caliber, a smaller rifle and a carbine. Each of these was fitted with four extra cylinders.

The young inventor was disappointed at the lack of appreciation of the so-called experts of the Ordnance Bureau, but he was not disheartened. He decided that he would give the officers in active service a chance to pass upon his revolving arms.

At this time the United States was engaged in a very hot little war which was being conducted down in Florida. The Seminole Indians had begun to forget the severe lesson taught them by General Andrew Jackson right after the War of 1812, and as they had accumulated a considerable following from the runaway negroes who had made Florida their haven of refuge, they decided that they could get along very well without governmental interference. To emphasize this, they ambushed Major Dade and his command of 113 men, who were passing through

The Colt-Walker revolver, 1838, .44 caliber, showing the swivel ramrod. Captain Walker's improvement.



Old Model Navy revolver fitted with carbine stock.



Colt side hammer pocket revolver, .31 caliber, Model 1855.

the Great Wahoo Swamp on their way to Fort King, on Christmas Day of 1835, and wiped out the whole detachment with the exception of two wounded men, who managed to escape. The troops were very cautious thereafter in moving through the tangled undergrowth of the Everglades, and while no pitched battles were fought, small bodies were constantly encountering the Seminoles. The regulation arms at the time, in addi-

to the Colt revolvers and to the Cochran and Leavitt ones likewise was, that being so easy to load, the soldiers would be tempted to expend their ammunition foolishly. Colt had submitted no pistols to the test, the weapons which his firm offered being a .69 smooth-bore

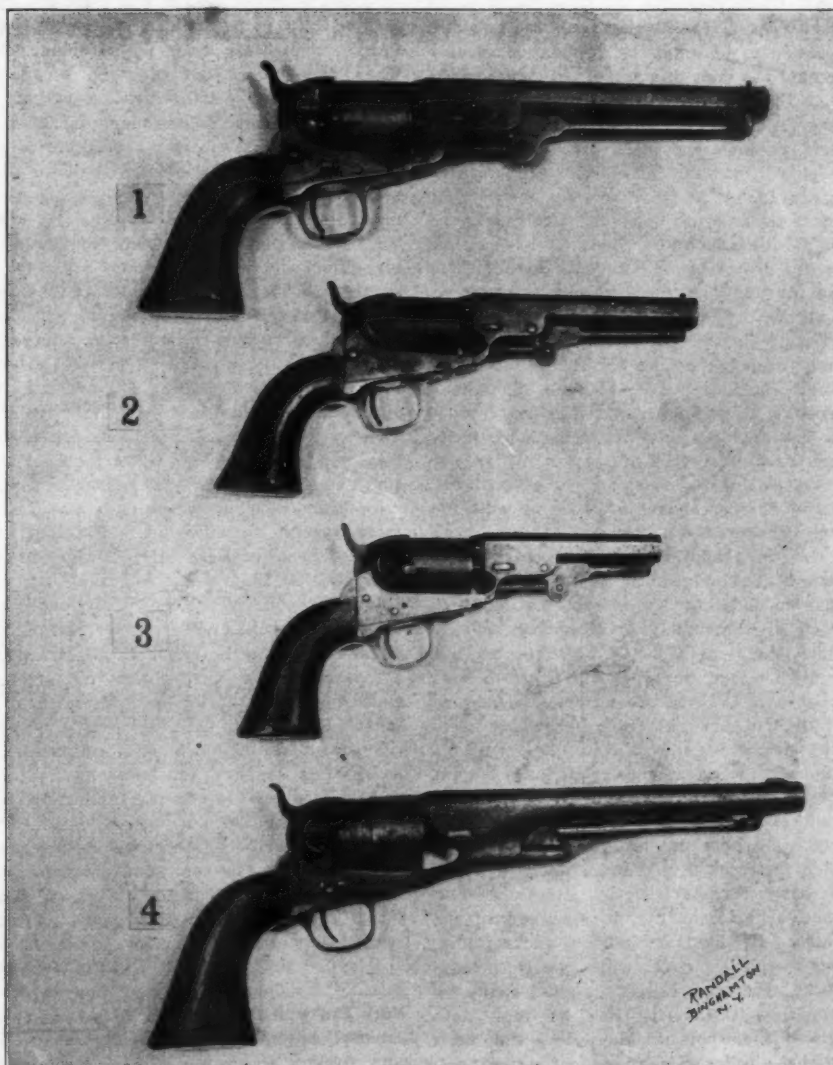


tion to assorted cutlery, were smoothbore muskets, with their "buck and ball" load, a sprinkling of rifles and the huge single shot dragoon pistols made by North and Johnson, all flintlocks. The Government had purchased a few hundred percussion arms at odd times, but the Ordnance Board could not see the sense in scrapping the thousands of "perfectly good" flintlocks on hand in the arsenals, so the soldiers continued to fight with the same type of arms that had been used by their grandfathers, and their grandfathers' grandfathers before them.

Young Colt proceeded to carry out his idea of a field demonstration of his arms. In the fall of 1837, he gathered together as many pistols, carbines and rifles of the different types made at the plant as he could conveniently transport, and set out for Florida, where he spent the whole winter. Unlike the modern business men who winter there, he neither golfed, motored nor flirted with the bathing beauties, but instead, visited every army post in that neck of the woods. He had no difficulty in disposing of his arms to the army officers, and one of them, then Lieutenant Colonel, afterwards General, Harney, was particularly taken with the carbines. As the officer had influence with the War Department, he was able to sever the masses of red tape that were in the way and procure an order for fifty of them, which were issued to men under his command. Whether these soldiers expended their ammunition uselessly "from its very convenience," as the Ordnance Board had feared they might, does not appear, but it is recorded that they made good *Indians* out of quite a number of Seminoles and threw a scare into a whole lot more, so that no more ambushes were attempted on a large scale.

When he had disposed of his stock and delivered the extra consignment, Colt went north again and settled down to the routine of factory work. The Florida campaign had demonstrated several structural imperfections in the arms, and he tried to remedy these faults. In this work, however, his most helpful critic was not an army officer, but Captain Samuel H. Walker, of the Texas Rangers, who had come to New York to purchase arms for the new republic. The ranger and the inventor met in the store of Samuel Hall, the leading gunsmith and arms dealer in the city at that time, and became great friends. The veteran Indian and Mexican fighter told Colt that while his pistols were the best arms of the sort that had been produced, that they were far too light and flimsy for the work demanded of them on the frontier. Among other defects, it was all but impossible for a man on horseback, riding "hell-fer-leather" to load them, for the barrel had to be taken off to allow the empty cylinder to be replaced with a full one and the rider had to hold on to all three parts, the loss of which rendered the arm useless.

The ranger captain went back to Paterson with Colt and spent several days at the fac-



No. 1—Colt's Navy revolver, 1851 model, .36 cal. No. 2—Colt's Pocket revolver, 1851 model, .31 cal.  
No. 3—Colt's Belt revolver, 1851 model, .31 cal. No. 4—Colt's Army revolver, 1860 model, .44 cal.

tory. About a month later, when he had returned to Austin, a new model Colt, the Walker revolver, was put upon the market. It was a great improvement over any that had preceded it. The frame was much heavier and stronger. The grip was of a more convenient shape, coming more naturally to the hand to give a steady hold. The springs and other internal "fixins" did not have so many quirks and turns to them, the fussy little folding trigger was replaced by one of conventional shape, enclosed in a sensible trigger guard and the cylinder was longer, to permit of loading with a heavier charge. The caliber of the arm was .44, but within a few weeks a still larger one, a .47, was put out. The feature which must have appealed most to Captain Walker was a neat lever rammer, attached below the barrel, which accurately seated the bullets in the chambers without removing the cylinder. When not in use it

was held in position by a hook, so that it would not interfere with the turning of the cylinder. Colt at once applied for a patent on the rammer, which was granted to him on August 29, 1839.

If the other officers of the company had attended to their work as well as Colt did, it would have been a winner from the start, but unfortunately they did not. The directors' meetings developed into a series of squabbles. There was a deficit of \$30,000 on the stock subscriptions, money that was badly needed for the purchase of machinery. Things got worse and all the directors resigned except Mr. Emmett, the president. An order for one hundred and sixty carbines for the Government, which came in at this time, looked like a life saver, but proved to be the contrary, for because of the lack of machinery, many of the parts had to be made by

hand, which ruinously increased the cost of manufacture. The Mexicans and Indians took a notion to be good for awhile, and on this account the sales dropped off to almost nothing. Under these adverse conditions the poor corporation struggled along until 1842 and then lay down and died. The plant brought very little and the machinery, such as there was, sold for scrap. The only things Colt was able to save out of the wreckage were his patents, which he managed to buy up, but he had no means now to make use of them and for five years no revolvers were manufactured.

During this period a new type of multi-shot pistol, the pepper-box, came into existence. The idea was an old one, older even than that of the revolver, and differs from it in that each chamber of the cylinder is its own barrel. In Mr. Bannerman's justly celebrated catalog appears a picture of a Corean matchlock pepperbox which is supposed to be several hundred years old and there are many others on exhibition in the arms museums abroad. The mechanism is not adapted to accurate shooting, like a revolver, for it is practically impossible to bore holes of any appreciable length, exactly straight, at precisely the same angle. It is almost as hard to set several barrels in a frame and revolve it so that each will point in approximately the same direction when in firing position, although the later developed Gatling guns operate on that principle.

In 1837, a gunsmith of Grafton, Massachusetts, who bore the historic name of Ethan Allen, patented a percussion lock in which the hammer could be raised and released so as to explode the cap, by one pull of the trigger. He used it first on pocket rifles, long-barreled pistols with metal skeleton stocks, then on pocket pistols and finally on pepperbox revolvers. Then he took unto himself a partner named Thurber and did a thriving business. The pepper-boxes were much easier to make than revolvers. Being only intended as short range weapons, they were not rifled, so they sold much cheaper. One of the accessories of the Colt revolver had been a double bullet mold, casting a round and a conical ball. Rather illogically, Allen & Thurber equipped their pepper-boxes in the same way. I have always suspected that John Burns, whom Mark Twain accused of shooting a mule forty feet to one side of the target, had loaded a "picket" bullet into his pepper-box.

The firm did not enjoy a monopoly of the business long, as Marston & Knox, of New York, and Robbins & Lawrence, of Windsor, Vermont, who also brought out the Jennings repeating rifle, got into the game. Moore & Woodward, London gunsmiths, also began to make them, and so did Lefauchaux, the man who invented the pinfire revolvers some years afterward. All of these pistols were of the same general type, a cylinder with chambers all bored out of the same piece of metal. Comblain, the Belgian arms manufacturer,

went them several better and produced one with separate barrels, which was hammerless. Pepper-boxes were made up to about 1856, when they passed out of style, to return again during the metallic cartridge period.

Just how Samuel Colt supported himself and occupied his time after the failure of his beloved Patent Arms Company until the outbreak of the Mexican War, none of his biographies state. As long as his revolving arms were not needed, people were contented to forget him, but when the troops began to be ordered to the Mexican border the officers remembered the pistols and carbines that had served them so well in the Florida campaigns and wanted more like them. They found that they were not forthcoming. The few that had survived the ravages of rust and mercuric caps were bought up at fabulous prices, but they were not enough to outfit the field and staff of a single regiment. Some of the southern officers, learning that no more were being manufactured, prevailed upon a Colonel V. G. W. Libeau, of New Orleans, who was an expert maker of firearms, to make some revolvers by hand. They were a curious combination of the Leavitt revolver and Colt's Texas model and the cylinder was turned by a toothed gear on the cylinder pin. Libeau worked in some of his own ideas, such as nipples adapted to use oversize caps and rifling of a sharper pitch than had ever been used before, but took out no patents. As he had no facilities for quantity production, not many were made.

As the demand for Colt revolvers increased, General Taylor saw that something must be done, so he sent Captain Walker, now an officer of the United States Army, east, to see if he could not hunt up his old-time friend and induce him to re-engage in the manufacture of revolvers. He found him in New York and with the assurance of a large Government order, had no difficulty in getting him to agree to engage in the industry once more.

An obstacle at once presented itself. Search as they would, neither Colt nor Walker were able to find a Walker-Colt in the whole of New York City, so Colt had to re-design the pistol from memory. The War Department immediately ordered a thousand of them at \$28.00 apiece. Colt contracted with Eli Whitney, the inventor of the cotton gin, and who had also made the Government a great many thousand flintlock muskets at his armory at Whitneyville, near New Haven, to manufacture them for him. A whole lot of machinery was required, but Whitney had a long bank account and a still longer credit, and the plant was equipped and running within six months time.

The new pistols, which are now known as the "Old Army Type," also as the Colt Dragoon Revolvers, were not a substantial improvement over the Walker Colt. They weighed four pounds and nine ounces each, or nearly twice as much as the Colt automatic used in the World War. The barrel was nine

inches long and the caliber was .44. In spite of their clumsiness, the soldiers were glad to get them and did not grumble about the excess baggage they had to carry.

While the first order was being filled, Colt began to equip an establishment of his own, on Pearl Street, in his home town, Hartford. In November, the second order came, for a thousand revolvers again, at the old price and he was ready to manufacture them without outside assistance. His plant was not large, but he had mustered all of the old hands at the Paterson factory that he could find, men who swore by him and who were ready to work overtime and all the time if necessary.

The second model Army Pistol was better than the first. It weighed eight ounces less than the first, had a 7½-inch barrel and a belt hook. It was also a .44 and a six shooter. The hook arrangement to hold the rammer in place had given way to a spring snap, which was much easier to operate.

These large revolvers were intended to be used in pairs, by the enlisted men, who carried them in saddle holsters, after the manner of horse pistols. For the officers Colt provided a pocket or belt revolver of .31 caliber with a 4-inch barrel, a 5-shot cylinder and no rammer.

As further orders for revolvers came in, Colt further improved his models. The third model was a trifle heavier than the second, but it was fitted with a detachable shoulder stock, so that it could be used as a carbine. Some of the stocks were hollow, so as to be used as canteens.

By this time the processes were standardized, so that all the parts were interchangeable. This was not an original idea with Colt, however, for Whitney and Simeon North had been employing it for years. When the third order for revolvers came in, Colt found that the work of business manager and factory superintendent was more than he could attend to, so he picked out the best man for the latter position that he could think of, Elisha K. Root, and offered him what was then a staggering salary. Colt's friends immediately predicted a second failure, but they had guessed wrong, for Root at once began to design machinery and install new processes so that very little of the work had to be done by hand.

The Mexican War was now ended, but the discovery of gold in California had given a new impetus to the arms industry, for no Argonaut thought of starting out until he had a "Colt repeater" tucked inside the band of his trousers.

In 1850, the original patent was due to run out, but at that time a provision of law existed whereby an inventor who had lost the benefit of his invention might have an extension. Another section gave an inventor whose invention was not sufficiently described a right to relinquish his first patent and receive in exchange one containing a sufficient description.

(Continued on page 21)

te  
to  
x-  
lt  
m,  
d.  
a  
ce  
i-  
ot  
d  
d  
e  
if

r  
s  
lt  
r.  
n  
h  
e  
-  
r  
-  
r  
l

l  
r  
r  
l

l  
r  
l



August

"S

I

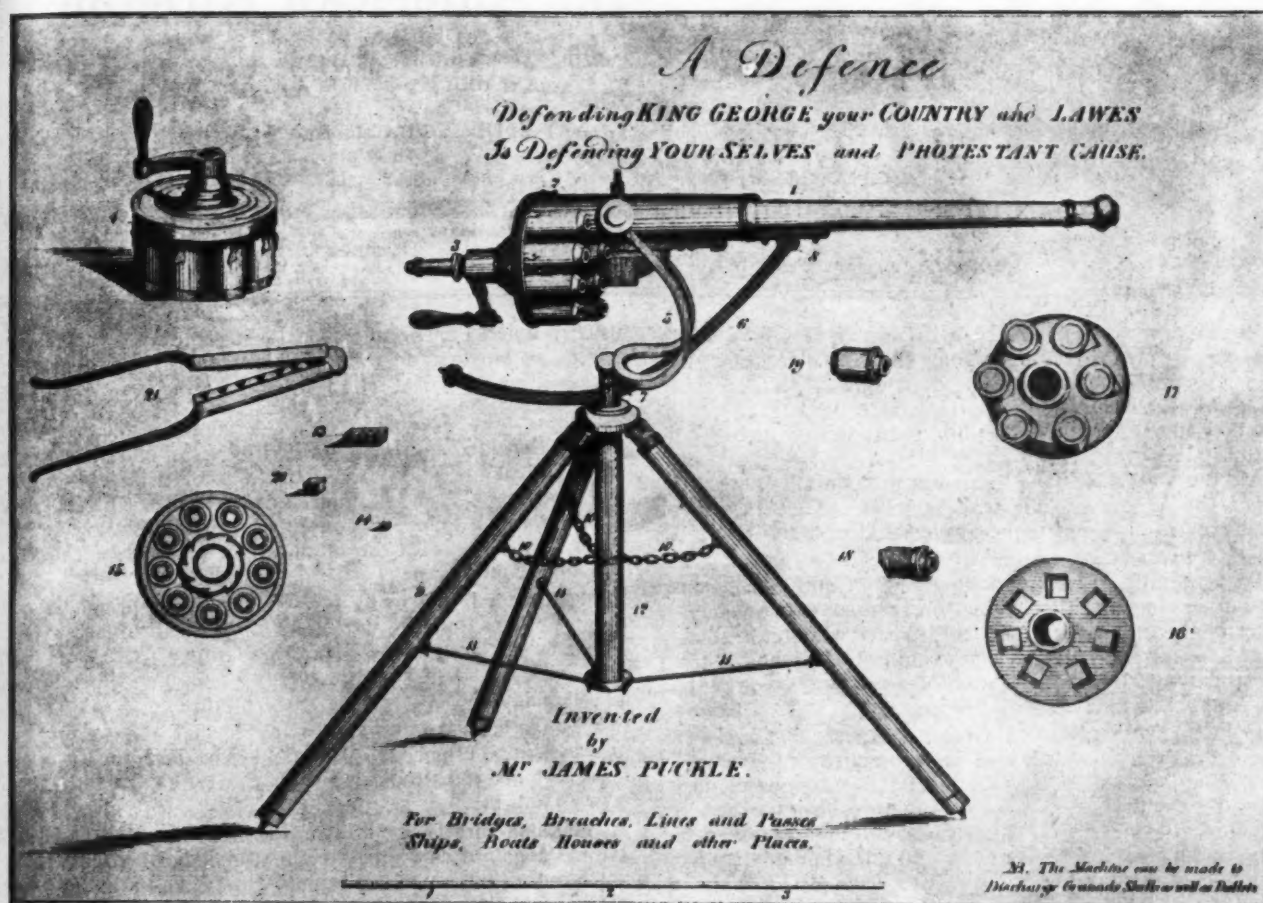
bec  
goo  
ent  
I  
gur  
gur  
the  
nee  
wa  
tha  
tw  
ad  
lis  
ge  
wi

wi  
ric  
lo  
ab  
pr  
ev  
ar



# "Square Bullets for Turks"

By Capt. E. C. Crossman



I AM writing this story for the sole purpose of showing up my friends, Major Julian Hatcher and Major Glenn Wilhelm, because as you well know, showing up your good friends is one of the finest sports in the entire list.

I note in their interesting book on machine guns that both of them infer that the machine gun is something new, and for this reason they produced said book. It was urgently needed at the time, and did fill a long-felt want, but both of 'em covered up the fact that they were discussing a subject that is two hundred years old. Suppose if they'd admitted the fact in the manuscript the publisher would have turned it down and suggested that they pick out something fresh to write about—like a Washington hotel clerk.

Some time ago my friend, Mr. H. D. Dodge, who used to be a ballistic engineer with various companies here and abroad sent to me a long rolled up package, and wrote that probably I'd find it amusing enough to frame and put up in my den. It seems too bad, however, to bury such an inspiration to invention as this, not to mention the chance to prove

that Glenn and Julian wrote their piece about a subject older than the first rifle. There has been a little tendency on the part of these and other machine gun artists to feel that their pet weapon is something up to date and real spiffy and that it sort of puts the poor old rifle into the discard.

When you get through perusing the set of patent specifications I enclose, you'll perceive that the machine gun is a poor old decrepit fossil with long whiskers, and that all Gatling, Maxim, Browning and Lewis did was to do a little goat-glanding operation.

For fear the half-tone man loses some of the beauty of the description accompanying the picture of the gun, I quote from it. The date is May 15, 1718, or two hundred years and six months before the signing of the armistice in the latest engagement in which Christian was pitted against Turk—and his semi-Christian allies.

Mr. Puckle entitles his marvelous gun:

"A DEFENCE. Defending King George your country and laws, is defending yourselves and protestant cause."

All of which is a good hint for present-day

inventors. A little pome at the start of the description sort of lightens up the dismal sheet. Mr. Puckle wasn't very nice to the Catholics, though.

The gun is set forth in the description thusly: No. 1, the Barrel of the Gun. No. 2, the Sett of Chambers Charg'd put on ready for firing. 3, The Screw upon which every Sett of Chambers play off and on. 4, a Sett of Chambers ready charg'd to be slip'd on when the first Sett are pull'd off to be recharg'd. 5, the Crane to rise and fall and Turn the Gun round. 6, the curb to level and fix the Guns. 7, the Screw to rise and fall it. 8, the Screw to take out the Crane when the Gun with the Trepaid is to be folded up. 9, the Trepaid whereon it Plays. 10, the Chain to prevent the Trepaid extending too far out. 11, the hooks to fix the Trepaid and Unhook when the same is folded up in order to be carried with the Gun upon a Man's Shoulder. 12, the Tube wherein the pivot of the Crane turns. 13, a charge of twenty Square Bullets. 14, a single Bullet. 15, the front of the Chambers of the Gun for a Boat.

(Continued on page 21)



## The American Rifleman

EDITORS

BRIG. GEN. FRED H. PHILLIPS, Jr.

KENDRICK SCOFIELD

T. G. SAMWORTH

ART EDITOR: CHARLES DUNN

Published semi-monthly on the first and fifteenth days at 1108 Woodward Bldg., Washington, D. C.

Entered as second class matter, April 1, 1908, at the postoffice at Washington, D. C., under act of Congress of March 3, 1879. Obtainable by subscription, \$3.00 per year. \$2.00 to individuals or members of clubs affiliated with the N. R. A. Canadian Subscription, \$3.50. Foreign, \$4.25.

### Firearms Experts

WHEREVER a firearm figures in a crime, that weapon, under the scrutiny of a skilled, intelligent investigator, can be made to disclose some important fact bearing upon the criminal and often leading to his speedy detection and conviction.

Although firearms have figured in the crimes of three centuries, the science of clue reading from the lethal weapon has never even begun to be appreciated or its potentialities dreamed of.

With literally hundreds of thousands of enthusiastic powder burners in this nation alone, firearms experts are of rare occurrence, and still rarer is the expert who really knows what he is talking about or who could last five minutes under interrogation from a prosecutor or an attorney for the defence who was familiar with firearms.

In fact, many of the few firearms experts that are available are such self-styled with little practical knowledge of their assumed field. How many of these experts could on oath truly state whether human features can be actually recognized in the flash of a pistol? How many, given two army automatic cartridge shells could tell whether they were fired in an army automatic pistol or in a Model 1917 revolver? How many, given a .32 caliber automatic bullet could tell whether it was fired from a Colts or a Savage? How many can answer any of these—or of the other score or more elemental questions, one or even several of which may be involved in any crime wherein a weapon figures? Very few, and we have known of cases where men called to testify as firearms experts have resorted to hypothetical questions put to practical shots in order to fortify themselves against requests for opinions before a jury.

Not even police departments, which maintain and train highly skilled chemists, finger print experts, toxicologists and explosive experts include among their list of specialists him who would be of most frequent value—the firearms expert—since the proportion of crimes against the person in which firearms figure is greatly in excess of those involving poisons or explosives.

And under these conditions, if the case is blatantly one wherein the guilt or innocence of the suspect depends upon whether the crime was committed with some particular gun, the prosecution or the defence—or both—produce so-called experts the sum and substance of whose testimony too often is laughable to the initiated and whose conclusions frequently could be set aside without difficulty.

There is an ever growing field in this country for bona fide firearms experts. The few now available who are in any way worthy of the name are not only numerically insufficient to meet the demand for their services but are

usually quiet, unassuming men in the employ of arms companies or engaged in other callings, following shooting as a recreation.

### Judge McAdoo on Firearms

NO AMERICAN can continue to read those portions of the annals of the International Police Chiefs recent meeting which touched upon anti-firearm legislation and fail to be impressed with the utter futility of most of the arguments advanced.

It remained, however, for Chief Magistrate McAdoo of New York to put the cap-stone of the ridiculous in place when he declared that it is a disadvantage to have a pistol in the house when burglars break in, or in one's pocket if one is held up. Authentic reports quote him as saying:

"I have been held up and I am glad that I had no gun, for the two inexperienced little crooks who held me up would have hit me over the head with it after they had taken it away from me."

This is a surprising admission from such a source. It of course does not carry the weight of a judicial utterance and is no more than a personal opinion, but it nevertheless leaves a bad taste in the mouths of Americans, who do not propose to be placed at the mercy of crooks who care nothing for police authority.

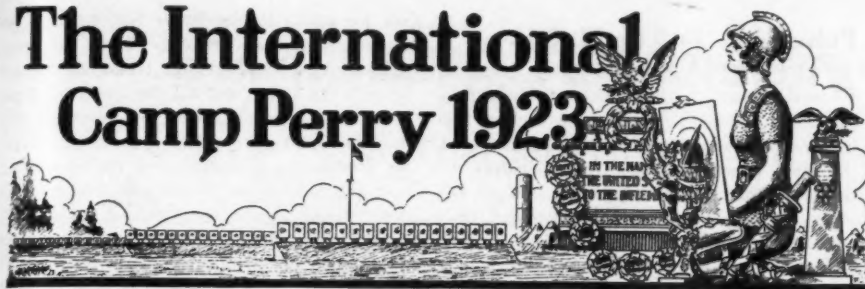
If Judge McAdoo really believes it to be a disadvantage to have a weapon when attacked, he is evidently relying upon good sportsmanship in the thug; a quality for which the class has never been conspicuous; on the other hand, such a doctrine as he preaches would undoubtedly be supported eagerly by lawbreakers—they would never permit it to apply to them, and it would make for "easy pickings," about the kind the Judge himself evidently must have provided when he was held up.

There is one conclusion of Judge McAdoo's, however, which cannot be successfully controverted. If he is as ignorant of the use of firearms as his statement would lead one to believe, he was probably right in thinking that his gun would have been taken away from him. If, however, he had been familiar with the proper use of a weapon, he would have at least been spared the experience of having "two inexperienced little crooks" rob him.

It would do Judge McAdoo good—and perhaps broaden his views upon anti-firearm legislation—to visit some of the shooting clubs in his own city, learn by first hand experience of the keen enjoyable sport shooting affords and incidentally banish forever the fear that either two or a dozen inexperienced crooks might take a weapon from him and hit him over the head with it.



# The International Camp Perry 1923



## A Post-Graduate Course

**T**HERE will be several hundred riflemen at Perry to whom the principal incentive for making the trip is the School of Instruction. There will be several hundred more who have already been through the school, but who go back with the complete knowledge that there will be something new they will learn this year. To both classes it may come as a new thought that in the person of the Executive Staff and "Commercial Row" they have a post-graduate course in the finer points of the rifle shooting game. How many riflemen have sought the opportunity to write Whelen concerning their rifle problems, Hatcher as to their hand-gun questions, and Askins on the matter of scatter-guns? How many more have eagerly read what these men have to say on their pet subjects?

At Perry three of them will be on hand, and their hosts of followers will find that they are good fellows, well made, that their knowledge of the idiosyncrasies of small arms has not expanded their hat-bands, and that anything they may know is yours for the asking. Few riflemen other than those in the immediate vicinity of his home have had the pleasure of talking with that wizard of barrel makers, Harry Pope. Harry will be on hand at Perry this year, and to those free riflemen whose interest lies in the direction of super-accurate barrels, fast locks, and the anecdotes of the old days of the free rifle in this country, Harry's tent will prove a mecca.

To Major Glenn P. Wilhelm and his staff at Daytona Beach, Florida, belongs the credit for learning many facts about the Springfield rifle, boat-tail bullets, and pressure barrels. They are not the only things about rifles that Wilhelm knows, but he knows those subjects thoroughly, and inasmuch as they will be uppermost in the minds of the men at Perry, he will probably be called on to discuss them more frequently than anything else.

In the optical field we are assured to date of the attendance of Fecker, of Cleveland, and Belding, of Philipsburg, Pa., both of whom are well-known to every reader of *The American Rifleman* through their instructive and interesting articles.

To those sportsmen who lean toward the British idea of shotguns and rifles, the announcement of the plan that one of the Greener family will be on hand at Perry for



a short time will prove of the greatest interest, and it is to be expected that out of the discussion between Mr. Greener, Harry Pope, Whelen, Hatcher, Askins, Wilhelm, and Caswell, there will emanate many thoughts and ideas worth carrying away.

Colonel Caswell will be on hand, and will, as last year, be in charge of the shotgun range during the day, but in the evening his fund of shooting experience will be at the disposal of all those who gather around to take the Camp Perry post-graduate course.

The loading and powder companies will as usual all be represented by men who know the shooting game from A to Z, and know the problems of the modern firearms and ammunition manufacturers. From night to night it



## THE ARTILLERY TROPHIES

The United States Coast Artillery, which has come to the front so rapidly in target practice during the three seasons past, has presented two magnificent trophies for competition at Camp Perry.

These trophies are in the form of cups of splendid workmanship and of appropriate design. The one on the left is known as the Artillery Marine Cup and will be awarded to the High Marine in the National Individual Match in token of the friendly feeling existing between the riflemen of these two branches. The one on the right is the Artillery Cup, and will go to the High Coast Artilleryman in the President's Match.

is expected that as is customary, the post-graduate school will move up or down "Commercial Row" through the tents of these manufacturers, wherever the faculty may gather. The Tyro and the expert will sit in and grow wiser in the Camp Perry post-graduate school.

## Entering By Mail

**C**OMPETITORS whose time at Perry is limited do not have to forego competing in the matches which are fired on the date of their arrival. Post entries are expensive, but entries may be made by mail before the closing date, saving the post entry fee, saving the good nature of the Statistical Officer, and saving to the riflemen the privilege of



**The U S Trophy**

ONE of the handsome bronzes which will be awarded in the Small-Bore Matches at Camp Perry is the gift of the United States Cartridge Company.

The US Trophy is a life-like sculpture of an Indian scout. It will be awarded the winner in the individual Short Range Match. This event calls for 20 shots slow-fire at 50 yards, and 20 shots slow fire at 100 yards.

competing in every possible match during his stay at Camp. Entries should be addressed to the Secretary, National Rifle Association, Camp Perry, Ohio, accompanied by the proper entrance fee, and mailed so as to arrive not before September 5th or not later than the closing date for the match as announced in the program.

### What Is The Best Time To Go?

MANY inquiries are being received from riflemen unable to attend Camp for the entire period, asking us what is the best time for them to go. The answer, of course, depends on what the rifleman wants to get out of the matches. If his particular interest is instruction, he should make his plans to arrive if possible Sunday, September 2, in order that he may draw his equipment and clean it up to start firing the first thing Monday morning in the School of Instruction. If he is more interested in the matches than in the school, there is no need for him to plan on arriving at Camp before Sunday, September 9th, as the N. R. A. matches do not start until Monday evening the 10th. If he is more interested in the spectacular side of the matches, it would be a good plan to arrive the latter part of the week of the 10th, and remain over the 18th and 19th, when the International Free Rifle matches will be staged. If his heart is with the service riflemen and his greatest interest in the National events with the service rifle and pistol, he doesn't need to arrive at Perry until Sunday, September 23, as the National Team match does not take place until the 26th and 27th, the 24th and 25th being devoted to team practice.

### Policemen At The Matches

A DETERM'NED effort is being made to make plain to the police of the nation the value of the School of Instruction and matches at Camp Perry to the guardians of the law. It would appear to be evident on the face of it that the school and matches are of as vital importance to the policeman, who may be called on at any time during any day that he patrols his beat to use his gun, as they are to the National Guardsman, who in all probability is called on to actually use his gun but once or twice during his enlistment. If the States and Militia Bureau have from bitter experience found it well worth while to transport teams of fourteen men to the School of Instruction and the matches, it would appear that the police departments might best take their cue and find the funds to transport a team of four men to the school and matches. Logical though this assumption appears, it has been a hard matter to get the municipalities to see it. This year it appears, however, that the surface has at least been scratched, and it appears very likely that there will be an appreciable number of police departments and individual police officers in attendance. The men who attend will not have their activities confined to the service pistol and rifle, but will be given complete instruction in all types of revolvers and automatic pistols, not only that they may know how to use them themselves, but that they may know how to disable the guns taken from criminals. They will be given a thorough course of instruction on the riot gun, and if present plans materialize, they will be taught the science of a proper use of tear-bombs. There is a conception in our minds that civilian riflemen and civilian rifle clubs have not in the past been as close to their local police departments as they might have been. With the broad plans for the police school at Camp Perry this year the civilian clubs are given an opportunity to take the matter up with their local departments and to build a foundation for a co-operation which in the future can be of inestimable value to all parties concerned. Get acquainted with your police departments now and see what they expect to do about the Camp Perry School.

### About Your Newspapers

THE final drive for advance publicity on the National Matches will be made during the last week of August. Following that, the dispatches will be sent out as the matches progress, via Cleveland. Considerable progress has been made this year in the direction of advance publicity, but much remains to be done, and proper publicity for the matches as they progress is very largely in the hands of the riflemen who are unable to go to Perry but who want to know what is going on. It is absolutely essential that every rifleman and pistol shooter take the matter up with his local news editor, not sporting editor, and

ask for editorials about the National and International events as they come in from Cleveland. The reason for taking the matter up with the editor, and not the sporting editor, is that the sporting editor will never see the material unless the editor approves it. Having assured the co-operation of the editor, you may then talk it up to the man who handles the sporting page. The National Rifle Association will do its part toward getting dispatches on the wires, but is up to local riflemen to see that they are printed in their local papers, as editors will not carry stuff unless they know that people in their community are interested, and at the present time there is a prevailing impression among newspaper men that no one is interested in rifle shooting. Get busy!

### Office of Director of Civilian Marksmanship Closed During National Matches

ON ACCOUNT of the absence of the Director of Civilian Marksmanship at the National Matches all sales will be suspended from September 1st to 30th.

The supply of special match rifles with heavy barrels has been exhausted. A new supply is being made and will probably be available sometime in August. The price cannot be stated at this time.



**The Dewar Trophy**

DESPITE the fact that it is the most talked about small-bore trophy in this country, few riflemen except those who have been to Perry are familiar with the appearance of the big silver cup representing the small-bore team championship of the world. The trophy has been completely refinished for this year's matches, and the above cut indicates to some small extent the beauty of the cup which, after traveling back and forth across the ocean several times as a gallery championship award, has finally been retained by the American riflemen in this country since 1919, when it was first awarded for the outdoor small-bore team championship.



# Handloading Ammunition

By  
J. R. Mallern



## CHAPTER XXII

### SPECIAL NOTES ON REVOLVER AND BLACK POWDER RIFLE CARTRIDGES

**T**HE principles governing fit of bullets, selection of powder charge and other factors of a cartridge are the same for all types of guns, modern or old-timers, black or smokeless types. Preceding chapters have explained these principles in general terms, however, which perhaps apply more directly to prevailing modern types, or so-called "high-power" cartridges, and a hand-loader who attempts to assemble ammunition for older types will meet special problems.

The characteristics of these cartridges are thin cases which buckle easily, straight shapes which do not assist the burning of the powder, strictly limited permissible pressures, and a less varied assortment of powders as compared with the modern types of cartridges. A shooter will discover more frequent and wider variation from gun to gun, in dimensions of both bore and chamber of rifles and revolvers. If he has been handloading only 30-1906 and other such heavy cases, he will be astonished at the weakness of the case walls and the primer pockets, and at the need for his individual devising of special dimensions in tools and in bullets to fit gun dimensions above or below the standard.

A shooter bought lately a carbine in 44-40 caliber in order to get the lightest possible saddle gun fit for serious work. The 44-40

standard diameter is .424-inch in the grooves, but this barrel proved to be .429-inch, and the factory jacketed bullets measured .425-inch. That condition is typical of this class of guns. Such variation did not matter so much when black powder and soft lead were used. The bullets expanded to whatever the barrel diameter might be. Jacketed bullets will not expand so readily, however. The way to get first-class shooting is to make sure that the ammunition fits the individual gun by selecting jacketed bullets which do fit, or using solid bullets specially sized.

Black powder ammunition on the market is nearly all old. Little of it is loaded any more. In years of storage in warehouses of the cartridge factories, or on shelves of dealers, it has deteriorated. The shooting magazines for years past have contained reports about factory black powder ammunition shooting large groups—four inches at 50 yards, or even six inches or eight inches. A two-inch group at 50 yards is the largest worth while considering. Various black powder loads when rightly assembled for their particular guns are capable of making one-inch groups at 50 yards, and some loads and guns will make smaller groups. Excellent accuracy plus more than standard power is possible from handloading black powder cartridges.

And what is the status today of black powder? It is not entirely obsolete. For certain of the large rifle cartridges and guns it possesses one or two advantages you can not duplicate with any smokeless. King's semi-smokeless is much of the nature of black, and

does not foul the bore so soon or so heavily.

While fine accuracy unquestionably can be obtained with black powder as the propellant, cleaning the rifle or revolver bore is required every few shots in target shooting, and the heavy mass of smoke is a handicap in hunting. Many shooters believe that no black powder we can secure today is of as good quality as that available 30 years ago. This belief is undoubtedly true of much of the black powder found on dealer's shelves, but probably is not true of the fresh product of our foremost makers.

Another factor in the loading of these types of cartridges is that for several of them no perfect smokeless powder is yet available. The 45-70 is an instance in point, the 25-20 another. For revolver cartridges more development of smokeless has been accomplished, with the result that little or no excuse exists for loading them with black powder. The advantages of those smokeless powders we do have, even in the most difficult cartridges, are so great that even though they are not entirely suitable, they are much preferable to the best black powder.

Our tables of modern loads list all acceptable charges for every purpose in each caliber of this type as well as of other types. It may be well to add, in connection with those recommended loads, and in connection with the Chapter 16, on powders that du Pont No. 1 smokeless has never given quite as fine accuracy as Scheutzen smokeless in the medium and small cartridges, although it appears to be a better powder for hunting ammunition. Scheutzen must be fresh loaded to give its fine results; No. 1 retains its qualities for longer periods when not under much compression and not exposed to dampness; yet No. 80 and Sharpshooter outrank the other two by far in stability. They will keep for years without appreciable change.

No. 80 smokeless has made a record for itself in the large-revolver cartridges. It is no better in them than the best two pistol powders, Bulls-eye and No. 5, but is better than older pistol powders. For the smaller revolver cartridges no other powder will equal the work of the two powders above named. Scheutzen and other rifle powders have been used in revolvers with satisfaction by some shooters, but at best they are substitutes.

One of the problems in all these rifle and revolver cartridges is to take care of the excess space in the case when the bullet is properly seated. Some of the powders burning suitably for the conditions and pressures are very dense and are used in charges of very small bulk. The original black powder charges filled the cases, and in fact supported the bullets from receding. Du Pont No. 1 and Scheutzen fill cases in proper charges, and are popular by reason of so doing for use in the 40-40 and 45-70 and similar cartridges. No. 5 bulks up well in its proper revolver cartridges. No. 80 is somewhat more dense than No. 1, and although undoubtedly a better

powder, sometimes offers more of a problem than the older smokeless in large cartridges such as the 45-70, because of the difficulty of securing the bullet against the push of the magazine spring.

A clear and brief discussion of the loading of these types of cartridges is difficult because one feature is so bound up with every other. We have noted above that Scheutzen smokeless has given more accurate results than some other brands of smokeless. This is true, and yet Scheutzen fired directly by a primer does not give quite as small groups as a rule as when fired by two or three grains of black powder loaded against the primer for the purpose. Thorough and instant ignition is more of a problem in black powder cartridges than in modern cartridges. There is less bullet resistance. The bullets almost always have less sectional density or weight and inertia. The cases have no bottle necks to make the powder gases churn in on themselves, and so improve this burning.

Bullet resistance is a large factor in the burning of any smokeless powder, and perfect burning is a necessity for consistent accuracy. We obtain bullet resistance by using a heavy bullet, a large bullet, a hard bullet, and by tight crimping. Soft lead bullets of less than groove diameter, typical of some of the black powder loadings, start and pass up the barrel so easily that behind them smokeless powders will hardly ignite. Hard alloy bullets of full or over-size resist gas pressure more, but even behind them many smokeless powders ignite poorly and burn incompletely unless case-mouths are crimped hard and deep on them.

Finally, the jacketed bullet of full groove diameter offers heavy resistance to the smokeless powder gases and develops them as they should be developed. Only the finest-grained pistol powders and rifle powders adapted for reduced charges will really burn properly behind soft, solid bullets. The factories put pocketed bullets in their smokeless loads for black powder rifles, and for many revolvers, not to prevent fusion from hot gases, or stripping in the rifling or to improve killing power, but to provide resistance and thus to establish the conditions required for successful burning of the smokeless powder.

In the foregoing we have an essential that no handloader must overlook. It has been noted that solid bullets in high power rifles perform best when they are two or three thousandths of an inch larger than the groove diameters of their barrels. Such oversize may not always be desirable or necessary in black powder and revolver cartridges, but initial resistance *must* be provided by employing one, two or more of the various means available. If jacketed bullets are used, the need is met; with solid bullets the requirements may extend even to selection of a quicker burning powder.

Partially burned smokeless powder charges lead to a more corrosive action in the bore of

the gun. In the 25-20 cartridge it is sometimes advisable to use a milder powder than Sharpshooter, which seems to be hard on the barrel, and to secure ignition from black powder primers, as the smokeless primers seem to add to the corrosion. Small booster charges of two or three grains of fine black powder are used with the charge of Scheutzen or No. 1 or No. 80. Most shooters prefer this booster or priming charge to be held down next the flash hole, but others say it can be mixed with the smokeless, and still deliver its results unhindered. It should be loaded into the case first, even if not retained at the bottom.

The measuring of powder has been covered in previous chapters. Black powder or semi-smokeless charges given in the tables often fill the cases above the bullet point. One way to settle these charges is to stand a six-inch length of brass or iron rod in the case mouth, on the powder, then tap the head of the case until every powder grain finds its place. Perhaps a better way is to pour the powder into the case slowly through a long tube, allowing every grain to seek a depression and there bed itself. Some shooters slant the tube and put cross wires through it, to retard the flow of powder enough to permit every grain to fall by itself into the case. These methods are applicable and useful in loading maximum charges of high-pressure smokeless powder in large cartridges, some of which fill their cases.

If something of the foregoing is not done, but the bullet simply forced down, some of the powder will be crushed, and crushing it leads to wild shooting if not to dangerous pressures. A powder charge may be pressed firmly in safety when the load calls for it, but any breaking or crumbling of the grains is detrimental.

One writer recently said that to measure out charges of a pistol powder with a scoop invited the use of shovels and the wearing of wings. He is right. The impression prevails that charges for revolver and black powder rifle cartridges need not be as exact as for high-pressure cartridges. The truth is that a charge of quick-burning powder has small leeway between inefficient bulk and efficient bulk and from that to dangerous bulk. An Ideal or Bond measuring machine will cut out the charges uniformly and accurately enough if adjusted correctly to begin with and kept tight. A scoop measure will not.

Perhaps large charges of No. 1 Scheutzen, No. 80 and of shotgun powder can be scoop-measured with fair satisfaction, but these articles nowhere are going to recommend that method for any other powders, or even for them except in emergency. The powder measuring machine is a necessity for loading the types of cartridges under discussion as well as for more modern ones. The pistol powders practically require scales as the basis for adjusting the measures, and scales are useful and convenient when other powders are handled, although the bulkier ones can be ad-

justed for by use of the tables in the handbooks.

The heavier charges of smokeless powders will melt bases of lead or alloy bullets when lighter charges will not. Fusion becomes a factor in revolvers with the heavy loads, just as in rifles. To prevent it, cut the charge, select another powder, harden the bullet or use gas check cups on the bullets. Some smokeless powders otherwise well suited to black powder cartridges burn so hot that they melt lead alloys in any proper charges. For all those powders and for midrange or full charges with any smokeless, gas check bullets or jacketed bullets are required. The gas check cups are desirable even in the 35, 38, 40 and 45 calibers to permit the satisfactory use of smokeless powders in full charges with home-made bullets.

Lubrication must be attended to religiously on solid bullets, otherwise leading of the barrel will take place. In addition to the usual filling of the grooves of the bullets with lubricant, as suggested in the Eighth Chapter, some shooters of revolvers use a thin wad of lubricant in the case behind the bullet. They pour the lubricant, well tempered with beeswax or resin or other wax, on cardboard or a table so it hardens in thin sheets, then press sections over the mouths of the cases after powder charges are in them, cutting out discs which the bullets later press home. A hard, long-lasting mixture is very important.

Another method is to place a thin wad of felt saturated with lubricant in the same position. Such a wad is objectionable in that it increases pressure and lowers velocity on account of its added weight.

Revolver cartridges differ fundamentally from rifle cartridges in respect to their chambering—they can not be fitted into the "lead" or throat of the barrel. Instead, they are held in a more or less loose cylinder chamber which may or may not be aligned exactly with the bore, and their bullets must jump free for a quarter of an inch or half of an inch. All we can do to contribute to their accuracy is to crimp them firmly in the cases so that they will be held as uniformly as possible, undisturbed by recoil, with all bullets having to jump the same and the shortest distance.

That is all, broadly speaking, and yet it includes a good deal. A soft bullet has no place in a revolver. The quick-burning smokeless powder required in revolvers, acts like black powder to upset soft bullets until they fill the cylinder chambers, no matter how much larger these chambers are than the barrel ahead. When such an enlarged bullet is forced into a tight barrel, it resists heavily, causing the gas pressure behind it to build up much above normal.

Bullets which by reason of length carry their bearing well forward to the end of the cylinder and enter the rifling after very short jump give less of this trouble. Short bullets, in short cases, give more of it. A wise general rule to follow is to seat all revolver bul-



lets out to the full length of the cylinder, less a small tolerance to insure the cylinder free turning, and to make them all *hard*. In past years we have read much about the exact temper of alloy best in revolvers, but the truth seems to be that any alloy harder than about one to twelve or fifteen, tin and lead, works well, but softer alloys do not. Furthermore, these hard bullets must be full or oversize.

The crimp is a vital feature of a revolver cartridge. Even though the case necks appear to hold bullets firmly, cases should be crimped. In reloading, the old crimp should not be reamed or chamfered out, as is desirable in many rifle cartridges, but bent out to allow the base of the new bullet to start. The inner edge of the case mouth should be kept sharp and square, in order to insure that it will hold the bullet immovably.

Here again, in withstanding the grip and the effects of crimp, a hard bullet has the advantage over a soft one. We know that for accurate shooting its dimensions must be right for the grooves of the barrel. If it is hard, it holds these dimensions against the tendency of the powder-blow to upset it to fill the larger chamber and holds them against mutilation by crimp of case and throat of barrel. The very fact that it is hard to start in the rifling forces it to center itself more nearly true. A soft lead bullet sometimes is thrown crooked to start with in the chamber, and the side which presses hardest yields rather than returns the mass to true position.

Expansion of cases is a factor with these low-pressure cartridges, just as with high pressure ones. In fact, the cases expand more, if anything, owing to their thinness. Resizing them is easier, yet is more tricky. One is liable to get the necks out of line unless the tools fit the cartridge properly. Cases fired in one gun will fit another, only sometimes, particularly a gun of different make. In full length resizing, heads and flash-holes of cases are often "jimmied." They are made too light to withstand much driving or pressing. Yet full-length resizing is important with some of the automatic cartridges and is mighty useful with any cartridge.

The ideal case for securing utmost accuracy in these rifles is one which is expanded by firing with a full charge in the particular gun for which you are reloading, so that it fits the chamber snugly enough to hold water. Then its neck should be reduced just enough to give an easy pressing fit over the bullet that is of proper diameter for the grooves of the barrel. One neck sizing die is usually all that is needed for any one cartridge, but different case neck expanding plugs are required for preparing cases to take jacketed bullets and solid bullets. Successful handloading of fired cases is impossible without the use of neck dies. It is possible to load without expanding plugs, but the resulting cartridges will be inferior in accuracy.

Buckling and bending of the thin cases will occur whenever resizing and expanding have not been attended to properly. If, however,

cases are of right dimensions and are clean, they can nearly always be loaded without distorting them, providing their handling is relatively gentle. They will not withstand the treatment often given heavy modern cases in de- and re-capping, resizing and bullet seating.

A loading tool with its crimping shoulder *adjustable* is almost a necessity. Adjust the crimping shoulder with particular care. Adjust carefully, also, the bullet seating punch or screw. These adjustments are necessary to prevent excessive crimp, which will buckle cases. When cases lengthen by reason of the indented ring straightening out as they are fired, file off the mouths a little, otherwise the cartridges will become too long.

To aid in securing alignment of the bullets, always open mouths of the cases. Start the bullets with your fingers, and be sure to start them square and true. If they start in a canted position, they will usually seat canted. The thin walls of black powder cases bulge and bend instead of straightening up the bullets. As you seat the bullet, *feel* it sliding down into the case. Work slowly. Then *feel* the crimping shoulder reducing the mouth of the case, separately. A skilled handloader knows just how much pressure he can apply without damaging a case, and how much is required to crimp the mouth well. He often can adjust the chamber of the tool a little short, then give each individual cartridge exactly the closure it requires without forcing it into the tool entirely to the rim.

Receding of bullets involves quite a problem unless all features are correct for preventing it, including a crimping shoulder on the bullet. Indenting the case necks with the Ideal Indenter is effective, but interferes with accuracy unless the bullets are jacketed or fitted with gas check cups.

Low-pressure arms seem peculiar in requiring for their best performance more individual treatment than high pressure arms. It is the usual thing to hear shooters talk of requiring some one certain temper of bullet. This may be the fancy of the man talking or may be a fact. It is certain that a grain of powder more or less will sometimes effect the group size noticeably. The only way to determine these things for any one gun is to try different loads under careful observation.

In revolvers, particularly, one gun will shoot with normal case expansion a load that will upset case heads and pierce primers in another gun of the same caliber. The only thing to do is to avoid argument with indications of heavy pressure, just as you would avoid arguing with a signpost. Cut the powder charge half a grain or double or treble that or more until primers no longer show excessive flattening and cases chamber easily after they are fired. Quite often, however, excess pressure in revolvers is caused by bullets being soft or too large or otherwise unsuited for the gun. The loads in the tables are for normal guns.

Revolvers should shoot into very small groups at 50 yards to be really classed as

accurate. The best of guns and ammunition will group ten shots in two inches at that distance. Six-inch groups should be about the maximum for a good marksman with the short gun. Ashley Haines reported that of fourteen groups, only one was larger than four inches at 50 yards.

Those cartridges used in both rifles and revolvers require different loading for each purpose. The rifle loading usually leaves unburned powder in the revolver barrel, and the revolver loading fails to develop full velocity in the rifle. Furthermore, it is seldom that a rifle and revolver agree exactly in dimensions of chamber and of barrel grooves.

For beginners especially, light target loads in revolvers are worth loading. They give light report and light recoil and are wonderfully accurate. In the 38 Special, for instance, charges of 2 to 2½ grains of Bulls-eye with a light bullet, or 3 to 3½ grains of Bulls-eye for regular bullets, are reported to be very reliable by our best revolver shots.

It is important that a handloader get the proper viewpoint toward fitting his ammunition to his particular barrel. Alfred Loetscher once remarked that " \* \* \* A certain black powder cartridge, factory made \* \* \* will shoot all over a 12-inch to a 15-inch target at 200 yards; compared to this we have the reloaded cartridge, reloaded with black powder \* \* \* ½ that will give groups at 200 yards of about four inches to five inches." Another quotation gives the factory viewpoint. It is from an article by H. W. Starkweather in "Army Ordnance."

After telling that ammunition for hundreds of different calibers is made at a cartridge factory, he continues: "Each of these loads must function properly in every arm chambered for the load; whether or not the blow of the firing pin varies from extremely light to extremely heavy; whether the chamber is small or large; whether the bore and rifling are good or bad; whether the arm is good or bad as regards design.

"These loads must not give misfires or pierced primers; must not give excessive pressures; must properly ignite and burn the powder; must give proper velocities; must give satisfactory accuracy or grouping, and many other varied results.

A word is desirable about figures of pressures and velocities. Black powder figures are not dependable when smokeless powder is used. Further, the length of barrel, shape and weight and hardness of bullet and its fit in chamber and barrel, the primer used, and in revolvers the amount of space between cylinder and barrel—every one of these features and many others have their influence on pressures and velocities. Any figure is liable to be away off from the truth.

Although the "high-power" cartridge is the modern type and the type of the future, a good deal of enjoyment is to be obtained from working up best loads in older types of guns. The results possible are only a little short of the records of our present day.



## The Physical Hazard

(Continued from page 5)

worse and worse until the time his rations were cut off, at the end of the sixth drink. During a period of two hours six drinks is enough for any man.

In the administration of beer the effect was entirely different than with whiskey. We could attribute the effects noted only to the effect of beer upon the respiratory and gastronomic functions of the body. After the first drink of beer all three of the shooters made lower scores. (It may be well to state here that our strings were 10 off-hand, 5 prone, and 5 from a seat with a peg rest. Our experiments were tried on three different nights; the first night we experimented with whiskey, and the second night with beer, and the third night with tobacco.)

Undoubtedly the amount of gas generated in the stomach and subsequently in the large intestine was the determining factor in the effect of beer. The more beer we drank the worse we shot, and this applied about equally to all three subjects; although the total abstainer during the evening drank only two pints of beer, whereas the occasional drinker drank four, and the steady drinker drank six. There was a complete unanimity among the subjects in noticing a difficulty in steady, measured breathing after consuming beer. It is the opinion of the writer that no serious nervous reactions entered into the noted effect of beer.

Although we did not make as careful tests in cases where lunch was served, yet it is the opinion of the writer after careful observation of himself and two or three fellow shooters, that the consuming of a lunch consisting of sandwiches, celery, olives, pickles and pretzels had a very similar effect, if done while shooting, to the consuming of beer. The effect is quite largely upon the respiratory functions. A distended stomach or transverse colon of course affects respiration, and the distention of the stomach with food or beer, or both, is clearly inimical to accurate shooting. We could not determine why, but our observations showed us that the effect of a distended stomach was more noticeable in off-hand shooting and in rest shooting than in prone shooting. Not that no effect was observed in prone shooting; but the effect is noticeably less. We can account for this only upon the theory that the prone position forces the stomach into a position where it does not have quite so much effect upon the lungs as in the upright position.

Our experiments with tobacco were all under the supervision of Dr. Logan or other doctors. We found that one cigarette smoked in the approximate time of five minutes increased the systaltic blood pressure by an average of 5 degrees. This blood pressure was taken upon five or six individuals, and it varied somewhat. The almost total abstain-

ers from tobacco showed a slight increase over 5 degrees, but so did the fairly constant users of tobacco if they inhaled a great deal of the cigarette smoke. Again, the effect of a cigarette was a good deal less noticeable upon any of the smokers if they smoked a test smoke within a quarter of an hour of having smoked before. One test was made upon a pipe smoker, and two upon cigar smokers. The pipe smoker showed less effects of the nicotine in his blood pressure than any of the other smokers. The cigar smokers showed less effect than did the cigarette smokers, except in one instance where a man inhaled a great deal of the cigar smoke. This had a tendency to make him dizzy and it increased his systaltic count 9 degrees. The effect of his dizziness or his scores was not noted because of the fact that he did not shoot for some time after the vertigo left him.

The effect of the blood pressure on the scores is a fairly good index of the effect of the liquor. So long as the systaltic blood pressure is not raised, it is our opinion that the scores will not be lowered. This is undoubtedly true with a great majority of shooters, because they do not drink enough liquor to classify even as our man No. Two does. It is true with the moderate drinker, for his blood pressure increases after several drinks. It is true with the steady drinker after he has drunk five or six drinks. However, running upstairs increases the blood pressure as well as the frequency of respiration, and we found

that running upstairs played havoc with our scores for at least twenty minutes after we had done so.

The net result of our conclusions is this:

First—If you want to shoot well, you must avoid eating a heavy meal just before shooting.

Second—If you want to shoot well, you must not partake of lunch during your shooting.

Third—If you will shoot well, you absolutely must avoid beer while you are shooting.

Fourth—Whiskey in small quantities has less effect upon the score than beer, but if taken in large quantities it has a worse effect, for the shooter soon becomes incapacitated from making more than 60 or 70 per cent of his normal score.

Fifth—A peculiar thing was noted with the total abstainers who took a drink or two of whiskey upon one day and went back to the range the following noon. Not one of them could shoot as well as he did the previous evening before he had taken a drink. It is our opinion that the effect of alcohol does not get out of the system for more than 24 hours, even if only one drink of whiskey is administered.

Sixth—Tobacco has a slight deleterious effect upon the score soon after smoking, but the effect passes off very much quicker than does the effect of alcohol. Again, anything that affects the gastronomical organs is in evidence immediately. The nervous organism is not affected quite so quickly, but the effect is more permanent, and blood pressure variations are a pretty good index of the effect upon one's nerves, at least so far as shooting is concerned.

## What About the Man?

(Continued from page 4)

with which we think most will agree when thoroughly digested. Shooting of any kind is nothing if not concentration of the mind. Now, then, one cannot do anything extremely well with his mind half working on another matter other than the thing to be attained. We refer to the trigger squeeze, pull or whatever may be your pet term for the let off.

There are undoubtedly more alibis built around the trigger on a rifle than any other one thing to do with the shooting. Men are more fussy on this one point of trigger pull than is in accord with present-day rifle construction. One hears all manner of complaints about the cussedness of triggers in general. It goes without saying that a properly constructed rifle should have a smooth, clean trigger let off in keeping with the nature of the construction of the weapon and this generally is true, but come right down to brass tacks, take the military type of rifle in the prone position at least, what difference should it make whether the pull be considered or not.

Isn't it a fact that the man who is always worrying over his trigger pull has his mind centered in the wrong place. Think for a minute. If he be concentrated on the exact spot where he wishes to hit the distant target, how can he even tell whether or not the pull be hard or light, dragging or smooth. Should it not eventually just let off unconsciously so far as the shooter is concerned? That is just what happens with the man who is properly muscle relaxed and concentrated on "wishing 'em into the central V." You cannot do two things at once and get away with either one satisfactorily. Suppose you quit thinking about the trigger and you may rest assured that after a bit it will quit troubling you. Muscular relaxation will cure the trigger ill. You cannot flinch if you have no muscular effort back of the second joint of the trigger finger. Practice the things contained above and they presently will become more or less automatic with you in the doing.

It is hardly necessary to take up much time or space with the other positions for military



Capt. Richard illustrates prone positions. . . Left, improper position commonly taken by riflemen; hand bent at wrist, with wrist tendons stretched and lower arm contracted, incapable of relaxation. . . Right, shooting properly with straight wrist and hand and rifle resting in fork of thumb and palm.

target shooting. Our present firing regulations appear to have been devised to allow the shooter to take any position so he be uncomfortable. The "jack knife" sitting position wherein the man could place his knees in the hollow of his arms distributing his weight and balance well relaxed has been tabooed, and he must now sit with his elbows between his knees, not over, but even in that manner can so distribute his weight into a balance that few muscles are actually required to hold himself in place. Use just as little muscular effort as possible and between shots relax those you do have to use.

Kneeling, throw the weight of the body well forward into balance. Rest the left arm as far forward on the knee as possible which will bring the left side of the body closely along the left thigh, balance by weight and relax even while throwing the bolt in reloading. Use the sling about the arm as in the prone, but do not strain against it. Slip the left hand slightly backward on the gun stock to increase the sling tension.

A good many men have a tendency to throw the head too far forward on the gun stock which causes the line of vision to come too close under the eyebrows. Hold the head as erect as possible and look straight out of the eyes, which will give you better vision.

Off-hand, or off-shoulder shooting is good sport, but it there be any excuse for it in military practice as set forth by the present custom and rules we have yet to bear the argument.

The "hip rest" position wherein the piece is set on the finger tips with the guard resting in the thumb, the upper arm close along the side, the body being almost at right angles to the line of fire with weight hanging straight down the left leg, the right relaxed and hanging back for ballast is the most steady of the lot. This is the target shooters' position and is tabooed by firing regulations, which says the upper arm must not touch the body, or words to that effect, but may be held in any other outlandish manner. Shades of Dr. Hudson, Harpp Pope and other old timers, this present-day military off-hand performance is some spectacle.

If there be any place where the military

man has occasion to use a training in off-hand fire at the enemy we cannot imagine it being done at one minute per with an ever present inspector along to see whether or not the upper arm of the firer was along or across the body. If the target shooting position must be barred why not go further and compel the soldier or marksman to use the left arm half or wholly extended along the rifle. Instead of giving him a minute to do the trick, expose his target for not over five seconds per shot. That would be real off-hand shooting and take it out of the slow fire target class. As it is now, where the man is denied the use of the equipment nature gives to him, the thing is neither fish nor fowl.

In the above we have tried to pass along the things that have seemed to us the most essential from an experience of some forty years with the rifle, both large and small-bore. An experience that has taken in more or less the things found in hunting, target and snap shooting. They are also equally applicable to the shotgun shooter. Being able to relax and rest under nervous strain comes from practice and study. Some of us acquire it unconsciously, others have to learn it, and we believe the latter class derive the most benefit from it. The more we study our own needs and short-comings the more we benefit from their correction.

## Elephant Hunting in Uganda

(Continued from page 7)

while to test the wind with our little bag of ashes. Suddenly the leading tracker stopped and pointed, grinning, a little ways ahead, where through a tangle of brush we could see part of the body and now and then the up-lifted trunk of an elephant. Beyond him were several others which we could hear, but could not see.

We were not over thirty yards from the nearest, and as we stood there trying to get sight of his tusks, he began to move in our direction, feeding as he came. It would have been quite impossible to get around to where we could get a view of the others, as the wind, which was in our favor where we were, would not have served from another position. So there was nothing to do but hope that the one slowly moving our way might be carrying the big pair of "teeth" for which we had been looking and which we were fully convinced we had earned. We were doomed to disappointment, however, as when he finally came to within about ten yards we could see through the underbrush that, while he was a big bodied brute, his tusks were small. We were greatly disgusted, but as it was part of the luck of the game, we had to take it with the best grace possible. As we stood waiting to see what he would do, he must have suddenly got a whiff of our tainted air, for he wheeled and dashed off, the others joining

him in his flight. They made a tremendous noise, breaking trees and scattering leaves and branches in all directions. We listened for awhile, and then went slowly ahead.

After going a short distance we stopped to consider whether it was worth while to carry on that day or to turn back, as we were several hours from camp. While we were talking in low tones with the trackers, who wanted to keep going, we were startled by a loud crash in the bush near us. We had seen buffalo tracks earlier and had seen the buffs themselves on other days, so we wheeled, guns in hand, to face the sound, as buffaloes are much more likely to start trouble unprovoked than are elephants. However, nothing appeared. One of the trackers, who had run a little to our right, could now be seen beckoning us frantically in his direction. We ran to him, and he pointed through the leaves. There, standing broadside to us and not over thirty feet away, was the biggest elephant I had ever seen. He seemed so huge, as he towered among the trees, that I could hardly believe my eyes. I looked to see what his tusks were like. Our head tracker had gone a little beyond us and now he signalled that he could see the tusks and that they were big. We stole to his side. There, peering through the bushes in a near-sighted manner, was the fount, his trunk reaching out toward us, and



the dim light of the forest gleaming dully on a tremendous pair of tusks. "Kubwa sana, Bwana," whispered the tracker, meaning "Very big, Master." I could not see as clearly as I should have liked, as the bushes partly covered his face, making aim mostly guess-work. Also, while a frontal shot at an elephant, if properly placed, should drop him, a shot into the head, between the eye and ear and forward of the latter, is much surer.

In this case, however, it was better to take what offered, as the risk of losing him by trying to better our position was too great. With fervent hopes that I might hit the lucky spot, I fired the right barrel of my .470 express, aiming as near as I could tell about eighteen inches above the place where his tusks went into his head. Close following I fired the left barrel, while, as he wheeled, Bwana let him have another. He was not fatally hit, for we heard him go crashing off through the forest.

We tore after him, dashing through the trees and underbrush with a lively disregard of any possibility of the elephant's turning at bay. Soon we came onto his spoor, plainly marked by blood. He was bleeding badly and seemed to be running blindly, for he did not follow the aisles or old trails, but ploughed his way through all kinds of obstructions. He made a plain trail of his own, and we followed as fast as we could, running wherever it was possible, but often having to crawl under thick bushes which had been brushed aside by the elephant, but which had closed together after him.

For several hours the trail lead us, now through the forest, now into the open. We worked our way through the elephant grass. The heat was so great that our clothes stuck to our bodies with the perspiration that ran from every pore. It finally began to look as though we were to lose out. The blood spoor got fainter and fainter. Soon it became very hard to follow and we realized that the elephant probably was not so badly wounded as we had hoped. It became doubtful if we would catch up with him that day, if at all. We halted to rest and decide our best course. It was getting late and our chances of returning to camp that night were growing faint. We decided to carry on, however, and to send a boy back to the Memsahib with a note, explaining that we would lie out where darkness found us. We had enough water with us to last until morning.

While we were talking one of the gun-bearers, who had been poking about in the bushes, dashed up with the word that a big funt had but a moment ago crossed the burned grass clearing ahead. We grabbed our guns and ran towards the place. It turned out to be another elephant, and not the one we had been trailing. He was not so big as the one we had been after but was still quite a fair sized elephant. He was nearly a hundred yards away and on the edge of the forest. I decided to kill him if I could, taking chances of finding the big one next day. It would

have been better to have tried to get closer but there was a good chance of his getting into the timber, where with the little daylight remaining, we could not possibly have caught up with him. He made a beautiful mark as he stood sideways against the trees. I fired at his head but just as I did so he swung a little to one side and the bullet struck him too far forward. It was a bad wound but failed to drop him or even stop him, for he made off.

We followed at a run, soon catching sight of him again. More shots caused him to stagger, but off he went again with us close behind. This time he seemed to be running in a big circle and it was not long before we came upon him, standing at bay in one of the forest lanes, his big ears out, alert and tense. He seemed about to charge. It was no time for ceremony. I emptied my heavy rifle into him and Bwana did the same. The gun-bearers, without orders, fired with the light rifles. Down went the big beast, his weight carrying over a couple of small trees, his tusks digging deep into the earth. One of the gun-bearers ran in as soon as he ceased to move, and with his skinning knife cut off the tip of his trunk. I asked the reason and he said that if a funt were not really dead, but only stunned, and should suddenly come to life while we were standing round him, we would be at his mercy, but that he would be practically helpless with the tip of his trunk gone. We cut off his tail and sent it back to the Memsahib with a note, telling of our good luck and asking her to send a chop-box of grub to us at a neighboring village where we planned to lie out that night. We then went to the village, perhaps three or four miles away, and the very welcome food arrived about eleven o'clock that night. As near as we could estimate we had covered between twenty-five and thirty miles that day, part of it at a run, most of it through either thick elephant grass or heavy forest, and in a temperature that must have been close to a hundred in the shade and much higher under the rays of the equatorial sun. We had had nothing to eat since a light breakfast at five-thirty, but we had a good elephant and a fair chance of collecting the big one the next day.

The local trackers and our gun-bearers, whom we sent on his trail the next morning, returned at dark with word that they had followed his spoor some twenty miles and that it had at last lead into the closed sleeping sickness area, where they could not follow. I have since learned that he was found after we had left the district. I will get the tusks, as I notified the Government that I would pay the usual reward for "found ivory."

We were very tired but very happy that night for we had had a wonderful day's hunting in a wonderful country, and had bagged the greatest of game. We lay under the tropical stars on the dry grass that served us for beds, watching the natives cook their evening meal. The low tones of their not

un-musical voices reached us where we lay, soothed by the very monotony.

Some time before dawn the inhabitants of the village were astir, for a dead elephant means meat to the people of that country. We had told them that as soon as we had chopped out the ivory and taken such other portions of the animal as we wanted for trophies they could have the remainder. As there are probably over two tons of meat, good from a native's standpoint, in each elephant, it meant a busy day for them.

The Memsahib arrived with the safari about nine o'clock and we all went over to where the elephant lay. Again I was impressed with his tremendous bulk. He was lying on his side on a small tree which he had carried down in his fall. One huge fore-leg was partly doubled under, while a tusk had been driven into the soft earth. The wicked little eyes were open and although they had begun to glaze, still gave one an uncanny feeling. Soon our skimmers arrived and began to chop out the ivory. It took some time as the tusks are buried in solid bone which must be carefully hacked away. Roughly, about two-thirds of the tusks protrude from the jaw of an elephant, while the rest is encased in a heavy bony mass which is part of the skull. We could easily understand while watching the operation of extracting the "teeth" from the massive head why it was that an elephant with such ease could uproot large trees with his tusks.

The work of taking out the ivory was at last completed, the two front feet and a large piece of hide were taken, and the carcass turned over to the waiting savages. A crowd had by then collected, for news travels rapidly in that 'phoneless country.

At the word from our skimmers that they had finished, a great scramble began. They climbed all over the great body, knives flashing and everybody yelling. Some waited outside the crowd and their friends threw big chunks of meat to them. Soon the whole crowd presented a gory sight, and as they were noisy and smelly, we decided to go back to camp, leaving them to their orgy. We were told that as they work progresses one or more men get inside the carcass and pass the hunks of meat to those outside. And it is a belief among the Uganda tribes that a man can be cured of rheumatism by burying himself inside of an elephant until he is thoroughly covered with blood. They will sometimes stay inside of one of the brutes for hours at a time. One wonders whether even to a savage the cure is not worse than the disease.

We left the Chopi country almost at once, as it was very, very hot, and not a particularly healthful country. We were also hoping for some time to hunt along the Nile, before we struck the Sudan boundary. It was along the West Nile that the Memsahib shot her elephant, so we closed this part of our African hunt with the comfortable feeling that we had played the hunting game to the limit, and had come out with our bags full.



## Hand-gun History

(Continued from page 10)

scription. Colt claimed the benefits of both of these statutes, to which he was undoubtedly entitled, to the first by reason of the failure of his company, and to the second, because as a young man of extremely limited means, he had been unable to employ the best patent attorneys and as a result had obtained an indefinite and obscurely worded lot of allowances. The patent office granted his petition and issued to him a supplemental patent in February, 1849, which was good for seven years. It covered the rotation of the cylinder by the action of cocking, the locking of the same during discharge, the unlocking again by the backward action of the hammer and the further improvement of segregating the nipples from each other by small walls, to prevent the accidental discharge of the chambers other than the one in firing position.

Edwin Wesson, who has been mentioned as one of the manufacturers of the hand-turned Leavitt revolver, had died not long before this time, leaving a pending application for patent for a really excellent system of revolvers, in which the cylinder was turned by means of a beveled gear, actuated by the hammer. Wesson's heirs got together, and with some outside capital, organized the Massachusetts Arms Company, establishing a plant at Chicopee Falls in that state. It was not a large one, but the arms which were produced there were of good quality and functioned well. Between 1849 and 1851, somewhere near three thousand revolvers were made.

The new company did not attempt to manufacture revolving rifles or carbines, and confined its output to three sizes of pistols. In general form they resembled the Leavitt revolver, with a strap *above*, but not *below*, the cylinder. The hammer was at the right side, and on the inside of it was a beveled gear which engaged the end of a short shaft leading to the left, where it meshed into another bevel gear attached to the cylinder pin, which revolved, turning the cylinder with it. No additional bolt stop was provided. Pocket revolvers of .31 caliber and navy and army ones of .36 and .44 respectively, were made and the company submitted one which was tried out by the Ordnance Board. It lacked the patented rammer of the Colt revolvers, but was a strong and well-made arm, and the Board was disposed to consider it favorably.

Here was the most dangerous rival which the Colt arms had thus far encountered and in 1851 Colt instructed his attorneys to begin an infringement suit against the company. The case was conducted in a thoroughly sportsmanlike manner. The plaintiff waived all claims for damages and the evidence was submitted upon an agreed statement of facts. Very distinguished counsel were employed on both sides. Colt was fortunate enough to

secure the services of Edward N. Dickerson, the foremost pleader in patent causes of his time, while Hon. Rufus Choate was one of the attorneys for the Massachusetts Arms Company. The plaintiff based his claims of infringement upon the principles covered by his extended patent. There was truly a great difference in the mechanism of the two types of revolvers, but after a trial which lasted over a month, in the course of which the history of revolvers was covered from the remotest periods of antiquity, the court decided that the Wesson design infringed the Colt patent and restrained the defendant from making use of it or similar principles during the life of the patent. The effect of this decision was to give Colt's a virtual monopoly of the revolver manufacturing industry in the United States until 1856, when his extended patent expired.

In 1849 Colt received a commission as lieutenant colonel of the Connecticut militia and was attached to the quaintly named "Putnam Phalanx." He was very proud of his title and on all arms that he manufactured afterwards appeared the legend "Address Col. Sam'l Colt."

In 1851 a new model Colt appeared upon the market. It was called the Navy Revolver, although it came to be used by many men who had never seen salt water. It was of smaller caliber than the ponderous Dragoon pistols, weighing 2 pounds 10 ounces, a trifle more than the .45 automatic and was a .36, which, strange as it may seem to the uninitiated, is a little larger than the so-called .38's caliber revolver bore of the present time, excepting the 38-40. The pointed bullet it used weighed about 170 grains. A novel feature was the small wheel in the base of the hammer, which bore upon the mainspring and minimized friction. Another, of doubtful value, was the "gain twist" rifling, which was much thought of at the time. For two-thirds of the length of the 7½-inch barrel, the pitch of the grooves was slow, something like one turn in 22 inches; then it became sharper, about one turn in 16 inches, from there to the muzzle. Whether it was due to the gain twist or not, the revolver speedily became famous for its accurate shooting, which was never equaled by any of the other percussion revolvers afterward produced. The grip was the same as that of the Walker Colt and is the same used on the 1873 model cartridge revolver, still being made. The barrel was octagon, heavy enough to be steady, with a small brass pin for a front sight, the rear sight being a notch in the peak of the hammer. On some of the earlier models a rear sight on the barrel had been used but it was apt to catch on the inside of the holster and most sensible men filed it off.

The Navy Colt was more popular than any other model which was made before 1873.

Wild Bill Hickok and the other notable hand gun artists of their day, would use nothing else until the percussion arms went out of fashion and its legitimate descendant, the .45 "Peacemaker," had taken its place.

On the cylinder of this revolver is engraved a picture which commemorates a battle which would otherwise have been forgotten. On May 16, 1843, while Texas was still the Lone Star Republic, its entire navy, consisting of three small sailing vessels under the command of Commodore Moore, engaged a vastly superior force of Mexican ships. The little flotilla, in spite of being out manned and out gunned, administered a fine trouncing to the Mexicans, while the officers and crew of the United States steam frigate "Mississippi" watched approvingly. When the action was over, the "Mississippi" saluted the victorious Texans. The commodore was a great friend of Colonel Colt, who placed the scene, correct in all its details, on his revolvers as long as he lived, in his honor.

## Square Bullets for Turks

(Continued from page 11)

16, the plate of the Chambers of the Gun for a Ship shooting Square Bullet against Turks. 17, for Round Bullets against Christians. 18, a single square Chamber; 19 a single round Chamber; 20, a single Bullet for a Boat. 21, the Mould for casting single bullets. (He must have read the first two or three chapters of Mattern's serial on reloading.)

Evidently Mr. Puckle hired George Ade to write the description for him, their use of capitals being somewhat alike, but George never thought up anything quite so good as the square bullets for the Turks.

What the inventor would have evolved for Germans two hundred years later would be worth seeing, probably the bullets would have had barbs on 'em.

When you read the body of Mr. Puckle's claims for his gun, you will have no doubt as to where the legal gentlemen of the present-day obtained their voluminous, tautologous, circumlocution by which they manage to use up 500 words to convey an idea that measures ten words long in plain English. They are merely from two to four hundred years behind the times, using stage coach methods in an age of motor cars, airships and wireless. But then when the medicos still insist on writing prescriptions in Hog Latin to prevent the victim from finding out that the druggist charged him six bits for two ounces of pure water, 10 grains granulated sugar, and a little caramel coloring matter, I don't suppose we ought to pick on the lawyers alone.

Mr. Puckle, concerning his gun and its performance, remarks succinctly and briefly: "Whereas, our Sovereign Lord King George by his Letters Patents bearing date the Fifteenth day of May in the Fourth Year of his Majesties Reign was graciously pleased to Give and Grant unto me, James Puckle of London Gent my Exors & Admors Assigns

the Sole privilege & Authority to Make Exercise Work and use a Portable Gun or Machine by me lately invented call'd a DEFENCE in that part of his Majesties Kingdom of Great Brittain call'd England his Dominion or Wales, Town of Berwick upon Tweed and his Majesties Kingdom of Ireland in such manner and with such Materials as shou'd be ascertain'd to be the New Invention by writing under my Hand and Seal and Inrolled in the High Court of Chancery within Three Calendar Months from the date of the (??) patent as in and by his Majesties Letters Patents Relacon being thereunto had Doth & may amongst other things more fully & at large appear, NOW I the said James Puckle Do hereby Declare that the materials whereof the said Machine is Made are Steel Iron & Brass and that the Trepeid whereon it Stands is Wood & Iron And that in the above print (to which I hereby Refer) the said Gun or Machine by me Invented is Delienated & Described. July the 25th, 1718.

James Puckle."

I have copied this exactly, punctuation—or lack thereof—as it reads in the patent. Could there be a more brilliant example of a modern, 1923, legal document, both water and air-tight in every seam?

Of course the layman is left a bit in doubt whether old Jim Puckle was patenting a machine gun or His Gracious Majesty, the document speaking of both in eulogistic terms and about equally divided as to space. However, I guess he was justified, as George seemed to be a good scout. The patent says that he was graciously pleased, and it seems to me pretty nice of George, as busy as he was, to look over the papers and get pleased about 'em. You don't find any American patents setting forth that President Calvin Coolidge was graciously pleased with the washing machine patented by William Scroggs, of Coon Hollow, N. Y. Not on your tintype. I doubt if the papers ever get to the White House at all, which goes to show that there is a lot of bunk about this Democratic form of government under which we live.

They lay great stress on the reign of His Majesty, even dating their papers by the various years of this reign. I don't wonder that they had reign in mind if George had to pore over all these patent papers.

Disentangling the gun from its clear descriptions, it appears to have been a match-lock gun, with detachable breech portion of cylinder, containing six or seven chambers, loaded before business began to pick up, and each containing a flash-hole, covered by a swinging cover. The cylinder was slipped on a central pivot and indexed for each shot by a ratchet handle operating on a gear in the rear of the cylinder much as a revolver cylinder is indexed by the hand operated by the hammer or trigger as the case may be. Without doubt each was fired by some crude means such as the glowing "punk" used on the an-

cient ships cannon, but the gun would afford six or seven quite rapid shots with all of its crudity.

Looking it over it is not hard to trace the Colt Revolver and the Allen "Pepperbox" from Mr. Puckle's flash of genius.

The deplorable feature of the arm is the lack of consideration for the Geneva Convention or the Hague, shown by Mr. Puckle. It would be bad enough trying to keep the

Christianity from oozing out of a gentleman punctured by an inch round-bullet, but imagine the mediceo of those days trying to patch up a Turk well shot up with a few square bullets.

Possibly it was such missiles which encouraged their tender customs of about 1718 of tapping the enemy wounded on the head with a knoberry, it saved the doctors a lot of generally useless work.

## Ohio Cleans Up Small-Bore Interclub Championship

THE close relation of Buckeye and bulls-eye evident on frequent occasions in years past at Camp Perry, Sea Girt, and in the N. R. A. matches was brought to the attention of the small-bore clan at the Interclub Matches just completed.

The Deerfield Gun Club, of King's Mills, Ohio, won the match with a total score of 1947, while Hillsboro, Ohio, took second place with 1942. Remington, winner of the gallery club championship, tied with George Washington University for the third set of medals, outranking the collegians on the strength of eleven points higher score at the long range. Scores of the ten high teams follow. Bulletins covering the results of the entire match are being mailed to all N. R. A. members and clubs.

The Deerfield Club used Stevens-Peterson rifles, Peters tackhole ammunition, and Sidle-Malcolm scopes. Hillsboro used Savage and B. S. A. rifles, Winchester 200 Precision and U. S. N. R. A. ammunition, with a combination of Stevens scopes, Ottway optical sights, and standard iron sights. Remington used remodeled Remington single shots, Winchester Model 52's, Remington-Palma ammunition and Stevens scopes.

The Beginners' Match was well patronized by the Tyro's, the most remarkable feature, however, being that there were no entries in Class B. It will be remembered that this match was divided into two classes, "A" for target rifles and "B" for sporting rifles. It would appear that so far the several hundred thousand .22 caliber riflemen around the country who shoot the trombone and lever-action repeaters do not realize that there is a special match in the program for them.

D. Brodhead, of Phoenix, Arizona, won the Beginners' Match with a splendid score of 196, one point better than C. F. Kill, Mahwah, N. J., and L. A. Moss, Los Angeles, Cal. Tenth, eleventh, and twelfth places were split between Mr. B. Pope, Pittsburgh, Pa., A. B. Sprague, Worcester, Mass., and Dr. M. E. McManes, Piqua, Ohio, with scores of 191 each. Dr. McManes was outranked, leaving Sprague and Pope to split the tenth place medals. Medals not being as easy to split as cash, both men will be awarded decorations.

Brodhead used a Winchester 52 with standard iron sights and Remington-Palma ammunition. Kidd used a B. S. A. with Fecker scope and U. S. N. R. A. ammunition. Moss used a Winchester 52 and Fecker six-power scope and U. S. N. R. A. ammunition.

The Fifty Yard Individual Championship carried a splendid entry list, H. A. Rich, of Pasadena, Cal., being pushed to the limit to win, with a score of 398. J. D. Foland, of Wilmington, Ohio, turned in the same score but was outranked, Rich having one nine on his last target and Foland two. Lee, of Birmingham, Ala., off-time champion, turned in

397, for third place, outranking A. W. Drake, of Kings Mills, Ohio, and H. H. Jacobs, of Dayton, Ohio, both of whom had the same total score. Ninth to fourteenth places in this match went to men with scores of 395. F. E. Border, in fourteenth place, was outranked with a 98 in his fourth target, leaving five men still tied for the two ninth and tenth place medals.

In view of the lateness of the season, it has been decided to award medals to all five men rather than arrange a shoot-off. Rich used a B. S. A. rifle with Fecker lenses, 8.5 diameters mounted in a 5-A scope tube, and Remington-Palma ammunition. Foland used a Winchester 52 with a 5-A scope and U. S. N. R. A. ammunition. Lee used a Winchester 52, Fecker scope and Peters ammunition.

The slow-fire pistol championship went to 1st Lieut. L. J. Harant, of the regular Army, with an aggregate of 539, one point ahead of Dr. A. W. Bruce, of Traverse City, Mich. W. S. Maxwell, of Los Angeles, Cal., took third place, with 524.

### NEWCOMERS' MATCH

D. Brodhead, Phoenix, Arizona.....	196
C. F. Kidd, Mahwah, New Jersey.....	195
L. A. Moss, Los Angeles, California.....	195
J. V. McKelvey, Ames, Iowa.....	194
Carl G. Otter, Worcester, Massachusetts... 194	
L. O. Davidson, Wheaton, Minnesota.....	193
C. J. Elerman, Columbus, Ohio.....	192
H. N. Renshaw, Nogales, Arizona.....	192
B. Pope, Pittsburgh, Pennsylvania.....	191
A. B. Sprague, Worcester, Massachusetts... 191	

### 50-YARD INDIVIDUAL

H. A. Rich, Pasadena, California.....	398
J. D. Foland, Wilmington, Ohio.....	398
T. K. Lee, Birmingham, Alabama.....	397
A. W. Drake, Kings Mills, Ohio.....	397
H. H. Jacobs, Dayton, Ohio.....	397
A. C. Atherton, Chicago, Illinois.....	396
L. J. Corsa, New York, N. Y.....	396
G. L. Cutting, Worcester, Massachusetts... 395	
A. A. Kull, Janesville, Wisconsin.....	395
O. H. Maberry, West Bend, Iowa.....	395

### SLOW-FIRE PISTOL

1st Lt. L. J. Harant, Lansdowne, Md.....	539
Dr. A. W. Bruce, Traverse City, Mich.....	538
W. S. Maxwell, Los Angeles, Cal.....	524
F. C. Payne, Los Angeles, Cal.....	517
H. F. Barrett, New York, N. Y.....	504
W. L. Darling, Boston, Mass.....	500
N. M. Hill, Jacksonville, Fla.....	488
C. R. Burdette, Baltimore, Md.....	485
Wm. McNamee, Jacksonville, Fla.....	485
T. F. Meagher, Tulsa, Okla.....	453

### INTERCLUB MATCH

Deerfield Gun Club, Kings Mills, Ohio.....	1947
Hillsboro, Ohio, Rifle Club, Hillsboro, Ohio 1942	
Remington Arms Rifle Club, Bridgeport, Conn.....	1940
George Washington University R. C., Washington, D. C.....	1940
National Capitol Rifle Club, Washington, D. C.....	1932
West Bend Rifle Club, West Bend, Iowa.....	1931
D. C. N. G. Rifle Club, Washington, D. C.....	1928
Perth Amboy Rifle Club, Perth Amboy, N. J.....	1920
Pasadena Rifle Club, Pasadena, Cal.....	1919
Portland Rifle Club, Team No. 1, Portland, Oregon.....	1918



# THE DOPE BAG



**A free service to target, big game and field shots, all questions being answered directly by mail.**

Rifles and big game hunting: Maj. Townsend Whelen.

Pistols and Revolvers: Maj. J. S. Hatcher.

Shotgun and Field Shooting: Capt. Charles Askins.

**Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.**

## Back Packing — The Pack Sack and the Pack Board

By Townsend Whelen

**S**ECOND in importance only to the hunter's weapons on which his life may depend, is his camping outfit. Whether his equipment for back packing on long journeys is satisfactory and practicable; whether his bed affords him protection against the elements as well as rest; whether his cooking utensils are adequate and yet easy to pack in little bulk; more times than not constitute the difference between an enjoyable trip and nightmare.

More and more care of detail in regard to camp equipment is being given by the outdoorsman as to just what constitutes the nearest to the ideal in this field.

There has just come from H. S. Horton of Anchorage, Alaska, a letter calling up back packs and camp equipment for discussion. Like most other sportsmen who approach the equipment question intelligently, Mr. Horton realizes that the type of equipment which in the past has proved adequate for relatively short trips within the confines of the United States may not necessarily give satisfaction on long journeys under different conditions. He says in part:

"I am trying to determine upon the outfit which will give the best service on prolonged wilderness trips, both in summer, late fall or early spring, and where rather low temperatures will sometimes be encountered.

"I have had quite a little experience in packing and camping around in the hills down in Washington State but have never been up against a prolonged pack-back trip far from civilization, where the equipment has to be cut to the minimum.

"All the writers on back-packing whom I have read advocate the Porlier style pack-sack, but in my opinion the Alaskan style of pack-board is far superior to any pack-sack. It fits the back snugly, just like a good pack saddle fits a horse. No tin can can punch you in the back, the air space between your back and the load is cooling in summer, and you can catch ahold of the lower end with your hands and ease up on your shoulders when they get tired.

"What bothers me most is the sleeping equipment. I have never had the opportunity of examining any of the various sleeping bags advertised, and can not very well qualify to select the best by reading advertisements.

"For some time I have been thinking of getting one of the Fiala sleeping bags and then making extra inner bags for it out of wool bats. What do you think of the idea?

Then there are the Filson, Kenwood, and various other bags, and the various down robes to select from. Have you any pet schemes on this subject?

"Perhaps the best thing for my purpose would be the Alaskan wolf robe, but as they run from \$250 to \$800, the price is prohibitive in my case."

Here in the States about the best pack that a man can buy is the Porlier, or Duluth pack-sack. It is very good and is getting increasingly popular. An Alaskan pack board is much superior to the Duluth pack-sack when the former is properly made, but it must be hand made to fit the individual, and so it cannot be profitably marketed. Dave Abercrombie endeavored to apply the pack-board principle to a pack of his own, consisting of a metal frame covered with canvas with a broad adjustable strap to rest on the hips, and with the necessary adjustments so that it could be made to fit any man. It was very ingenious, and it worked well at first, but it did not stand the racket very well. I used one in Panama for a while and it was fine, even though I had to patch it up with things cut out of all sorts of hides. Once I remember I patched it up with a piece of monkey skin twisted into a thong. This pack now resides at the bottom of the Caribbean Sea, where it went when a dugout canoe upset one day. Alongside of it there must be a .250-3000 Savage rifle and a good L. C. Smith shotgun. It was certainly an expensive upset—but that is another story.

I think the Alaskan pack-board will be much the best packing contrivance for a trip such as is described. In it sharp edged things do not dig into the back, and the wearer can ease up on the load by holding up on the lower corners as Mr. Horton says. Also the bulk of the weight comes on the hips where it is easier to bear the weight than on the shoulders. Also, when the weight comes low down on the hips one keeps his footing better in rough going as he is not so top heavy.

Relative to sleeping bags, for the past ten years I have used one made up as follows: The inside bag is merely a light weight, all wool blanket, sewed up in a bag 3 feet by 7 feet, weight 2½ pounds. The outside bag, same size, is a pure wool bat quilted between light, all-wool, grey flannel, weight 4½ pounds. Outside of these is a light cover, water-proof silk on the bottom and above the feet, but ordinary unbleached muslin over shoulders and hips. In warm weather I remove one or the other of the inside bags. The entire bag weighs just nine pounds and I have used it in perfect comfort on

a bough bed down to about zero, although below that it is not warm enough. Much depends, of course, on the wind, as a cold wind blowing on your bed would make you sleep cold. In connection with the above, please consider that I sleep very warm, requiring only about half the bedding that city men usually find necessary.

Last year in Alberta I had a chance to try a heavy Woods elderdown robe for a few nights, and I think that it is better and warmer than my bag. It weighs about the same, and packs in the same size, and costs in Canada about \$40.

For shelter I have gotten entirely away from tents. In very cold weather, or in rainy weather you want some sort of a lean-to arrangement to keep you warm. The ordinary lean-to tents are all right when the wind is all right, but about half the time the smoke eddies around at them something fierce. Instead I use a tarpaulin with grommets every two feet around the edge, 8 x 11 feet, of green water-proof Egyptian cotton or water-proof silk, weight three pounds. This I rig up as a simple lean-to on poles, either leaving the ends open, or filling them in with spruce boughs, depending upon wind conditions. With this you can always find a combination that will keep you warm and leave the lean-to free of smoke. Besides, it is lighter than a tent and easier put up.

The sleeping bag or elderdown robe is rather bulky. The best way to dispose of this bulk is to wrap the bag around your whole pack, or rather wrap all your outfit except the axe up in the bag, wrap the tarpaulin around outside, and then lash the roll to your pack-board.

For cooking utensils I use two little aluminum pots 6 inches high by 7 inches deep. I fill these with grub, put them bottom to bottom, and wrap them up in two dish rags. I also have a U. S. A. mess pan which does for both fry pan and plate, and my knife, fork, and spoon and some other things go inside it. There is also an enamel cup and a baking powder can filled with matches. The grub I put in small sacks made of water-proof silk. Then I have several small kits, very light and compact, done up in khaki rolls containing toilet articles, rifle cleaning kit, and repair kit (needles, thread, awl, rivets, hobnails, etc.). I also usually carry on an extended trip two pairs of socks, one pair of moosehide moccasins, and a small towel. If the trip is to be a long one, a few extra cartridges in a water-proof silk bag will be necessary, also perhaps films for the camera.

On my belt I carry my field glasses, small camera, and about 15 cartridges in a little cartridge box. In my pockets I have knife, watch, compass, water-proof match box, loose matches, whetstone, handkerchief, pipe, tobacco pouch, and a small fish line and hooks.

The above outfit, skimmed down light for a week's trip, weighs about 20 pounds, not including grub. For a longer trip with cartridges, socks, moccasins, camera films, tobacco, toilet paper, larger cake of soap, etc., added, it weighs about 25 pounds, not including grub.

Of course you know that it is entirely possible, in a good game country, for a man to live on meat alone without any outside grub. But ordinarily a man will want to take some oatmeal, prunes, sugar, tea, beans, bacon, rice, etc. A good rustler can get along well for a month in a game country with 25 pounds of this outside grub, making his entire pack weigh about 50 pounds, and this is plenty heavy enough if one is going to do much traveling.

How much weight ought one to pack? This depends upon a man's strength, the country he is packing in, and how much he is going to travel. On level ground, and good going, a strong and experienced packer can go along for six to ten miles with 125 pounds and not feel it much, but he won't want to repeat it again the next day. If he attempts to climb a good stiff hill or small mountain with such a pack he will have his belly full all right. For constant travel every day or two, over rough trails, 60 pounds is a very heavy pack for an experienced and strong packer. Forty pounds is about all the experienced and strong city sportsman should try. Thirty pounds is enough for the ordinary sportsman. Even these weights should be reduced in a very mountainous country. In the good game country of Alaska it is often possible to use a couple of dogs as pack animals, packing from 15 to 30 pounds apiece, as they can be fed on salmon and game, and you do not have to pack for them. I am big and strong, and fairly used to packing, but I know that for all day packing, three or four days a week, I don't want anything more than 50 pounds over ordinary trails, or over about 35 pounds in rough mountains. Last fall I had to throw down a pack weighing between 100 and 125 pounds after carrying it down a valley with rough going for about six miles. At the end of that six miles there was a 3,000-foot climb that I could not get up with that pack. I would rather double-track it with two 40-pound packs than try to take an 80-pound pack 12 miles.

While back-packing is downright hard work, there is a certain fascination about it. One has more freedom that way than any other. Also, it is the cheapest way of going.



## POWDER CHARGES AND BULLET WEIGHTS

**A**RE the Remington rolling block single shot rifles fitted with Springfield barrels by Bannerman safe with the service load?

Why are black powder guns with heavy powder charge and light bullet not considered as accurate as moderate loads? I mean the loads to get a low trajectory and high velocity, as .35-90-217, 45-125, etc., when the smokeless cartridges have higher velocities without much regard as to the twist of the rifling. Notice, for instance, the .30-30 is rifled with from 9 to 12-inch twist, yet it shoots a squib reload or the new speeded up cartridges equally well.

Are cartridges ever too heavy as to the powder charge as to be not as accurate as the medium ones?

The .22 long rifle has eight grains of lead to each grain of powder. Most of the best black powder loads have about 4 1/4 to 4 1/2 grains of lead to each grain of powder, considered in the most accurate sizes a 25-20-86; 32-40-165; 40-90-370, etc.

Is the 2500 yards given as the extreme range as the best elevation that the .30-706 will shoot a bullet?

Is extreme initial velocity or a long bullet most necessary for extreme long range shooting? Were any tests ever made to find the limit of the carrying distance of the .22 short, .22 long rifle, 32-40-165, 40-90-370, 45-70-500; Sharps 45-120-550 or the 50-70-450 Government? The 500-grain Government bullet is the longest bullet used now, 1 5/16 inches long.

What is the advantage of smokeless powder in moderate loads? I found all I used to be harder to clean thoroughly without any increase in accuracy. In a .22 revolver smokeless powder gas seemed to dry all the oil in the works so it would not function much sooner than black would foul it so it could not be used handily. Semi-smokeless was the best. In 25 years of reloading I have gotten two batches of black powder that would dry and cake in the barrel; otherwise I shot reloaded shells in a rifle until I was through without wiping and it did not seem to get any dirtier, 125 shots was the most I shot in one day though.

P. H. M., White Salmon, Wash.

Answer (by Major Whelen): Perhaps the best way to answer your questions is to call your attention to certain laws of ballistics.

The faster a short, stubby bullet is speeded up the more inaccurate it becomes. For example, a .32-20 cartridge is quite accurate to 150 yards at not over 1500 f. s. Give it 2,000 f. s. and it is not accurate at any range.

To be accurate, at long range a bullet must be long and heavy, or it must have a fine, sharp point. The .44-40 is not accurate beyond 150 yards. The .30-40-200 is accurate to 1200 yards. The .30-1906 cartridge with 150-grain pointed bullet is accurate to 1200 yards, but a similar round nose bullet of 150 grains would probably not fly accurately beyond about 300 yards.

The longer a bullet is the quicker must be the twist to keep it point on during its flight, or else the quicker must be its velocity. Take a bullet of 25 caliber weighing 86 grains in a 14-inch twist. If the velocity be lower than about 1200 feet per second the bullet will keyhole. And yet in a 14-inch twist we can fire a 100-grain .25 caliber bullet perfectly when we increase the velocity to 2500 f. s. In comparing twists and calibers we must not compare the twist in inches but the twist in calibers. Thus a twist of one turn in 10 inches in .30 caliber is a twist of one turn in 33 calibers. A twist of one turn in 18 inches in .22 caliber is a twist of one turn in 82 calibers.

Accuracy depends much on the way a rifle is chambered. Little was known about this in black powder days. It is highly desirable to get the bullet out of the case, through the throat, into the rifling with the minimum deformity and injury. This is best accomplished by cutting a chamber very accurately to fit the cartridge case, and having it very accurately in line with the axis of the bore by loading the bullet with a large portion of the cylindrical portion of the bullet outside the case, and by throating the barrel so that the bullet fits with great accuracy in a cylindrical part of the throat, and is straightened up there so that its axis is coincident with the axis of the bore before firing. Then the bullet has nothing to do but to slide straight forward with its axis in line with the axis of the bore.

The modern jacketed bullet is very much more accurately made, and resists deformation much better than the old lead bullets.

Modern smokeless powder leaves practically no accumulative residue. In this respect it is far superior to black powder. I cannot understand your experience in revolvers. It is a well known fact that the functioning of a revolver is finally practically stopped by the accumulation of black powder, and practically never stopped by modern smokeless pistol powder.

The higher the velocity of a bullet the less it is affected by atmospheric conditions.

I think the above will answer many of your questions and explain why modern rifles are so

much more accurate than the old black powder weapons. Please understand that the old black powder weapons are not always better when used with smokeless powder than with black powder. In many cases these old weapons do their best still with black powder because their chambering is such that it is necessary that the lead bullet be upset quickly to fill the grooves, and this is better accomplished with black powder than with smokeless.

As a comparison between the modern rifle and the older weapons, there never was an older weapon that ever equaled the accuracy just obtained with the Springfield rifle and the International ammunition. This combination shot 3 1/2 inch groups steadily at 300 meters.

## HOW TO USE THE DOPE BAG

By observing a few simple rules, shooters who desire to use The Dope Bag can materially contribute to more prompt and efficient service; also such cooperation will assist the editors in handling the great volume of correspondence.

The Dope Bag is intended to be a source of information not readily available to the average shot. Therefore, before writing, consult the various catalogues and ballistic tables published by manufacturers. Much information can be obtained from them as well as from standard books and publications of the N. R. A.

If these publications do not fully answer the question, write to The Dope Bag, marking your letter for the attention of the editor in whose field the query falls; and applying to the Director of Civilian Marksmanship—not the Dope Bag—on arms and ammunition available for sale and the prices on same. It is impracticable to refer letters around.

Write legibly on one side of paper only and sign name and address legibly. Almost every mail contains letters that can not be deciphered and hence can not be answered.

## THE SPRINGFIELD ON GAME

**I**HAVE been having some correspondence in regard to the new 180-grain, open point, boat-tail bullet for the .30-706 Springfield. I have used practically all the other loads in the Springfield in hunting. And I wanted to get some information in regard to the killing power of this new bullet in actual use on big game.

I am told that you have used this cartridge in Northern Alberta in the fall of 1922.

Any information you care to give me in regard to this load will be greatly appreciated.

O. W. F., Athol, Mass.

Answer (by Maj. Whelen): I have used my Springfield sporting rifle almost exclusively for big game shooting for the past 12 years. At first I used the Newton 172-grain bullet, then the old Remington umbrella point bullet. Both these killed well, but they seemed to go to pieces too quickly. On my expedition to the far North last summer and fall I used the Lubaloy 180-grain open point boat-tail bullet, muzzle velocity 2725 feet per second. With this rifle and ammunition I shot grizzly bear, moose, caribou, sheep, and goats. The ammunition behaved splendidly, killing instantly in almost every case.

Grizzly bear: At the shot the grizzly put down its head, and like a ball rolled down the mountain into a cloud and out of sight. Bullet went in the left side behind the shoulder, came out further back on right side, and when we came on it the bear's entrails had come out the wound and were wrapped around the body. Range 200 yards.

Moose: At 315 yards. One shot smashed through the body and heart, killing the moose in its tracks as it stood in a little river.

Caribou: At 50 yards. Bullet struck behind the shoulder, lifted the bull off its feet, and

slammed it against a big rock. Bullet made a large wound when it came out. This was the largest caribou killed in Canada in years.

Goats: All anchored on the first shot, but it usually took two or more shots to kill. On account of thick fur, thick hide, and phlegmatic character the goat is harder than any of our big game to kill with one shot.

Sheep: Two killed dead in their tracks with a single shot each at 100 yards. Bullets passed clear through behind the shoulder, making large wounds at exit.

## CLEANING THE 32-40

**I**AM using a nickel steel Winchester single shot, made by them years ago as the best gun they could turn out and never so far have I used anything but black powder except a little Sharpshooter, which I discontinued, as it was seen to be hard on the gun. I only used about 50 shots, cleaning with a Nitro Solvent Oil several times during the match and always at any time before coming away in the end of a match, again at evening and again at night before going to bed, always followed by one cleaning each day for four days before putting the gun away for a time. I leave it heavily coated with Nitro Solvent at all times. In using Du Pont No. 80 powder is this sufficient cleaning in this way, as I want to use No. 80 if I can and do no harm.

I have also a B. S. A. new arm. Both guns in beautiful shape inside. B. S. A. .22 Long Rifle Palma shells. Are there any other make of accurate shells that are better for this .22 and is the same cleaning as above quite all that is necessary? In using Du Pont No. 80 could I get over the smokeless primer trouble by using black powder primers, and if not will the smokeless primers hurt my .32-40 if cleaned as above; also is there any harm can come to the B. S. A. by the firing of Palma shells?

E. L. C., Orillia, Canada.

Answer (by Maj. Whelen): A little trouble is sometimes experienced in keeping the .32-40 barrel free from rust when Smokeless Powder is used and such a weapon with such ammunition needs the very best of care. I think that it is practically impossible to get black powder primers today. Most of the companies have ceased making them and are making a low pressure primer, to be used with both black and low pressure smokeless powder, but if you can obtain any genuine black powder primers I should use them and use three to five grains of F. F. G. black powder in the base of the cartridge case.

Cleaning the rifle with oil is not good practice. The reason why we had so much trouble in keeping our smokeless powder rifles cleaned was that we did not know until two years ago that water was the only thing which would properly clean them, and we kept water as far away from the barrel as we could. Under separate cover I am sending you a copy of "The Care and Cleaning of Modern Firearms."

The Remington Palma .22 Long Rifle cartridges should do excellently in your B. S. A. rifle. As long as they shoot into a 2 1/2-inch circle at 100 yards I should stick to them. Some lot, however, may not do this and it will be necessary then to experiment with various lots of ammunition loaded with Les Smoke or Semi-Smokeless Powder to find which lot does the best work in your gun. The following is a form paragraph on this subject, which will explain matters more clearly:

It is impossible to state which is the most suitable .22 caliber Long Rifle cartridge to use in the .22 caliber Springfield rifle, because different rifles give quite different results with each make of ammunition, and an actual trial with each make and lot is necessary to determine which does the best work in a particular barrel. This also pertains to all makes of .22 caliber rifles.

This matter of selection of ammunition is more important than most riflemen believe. Moreover, the lot of ammunition is just as important as the make. For example, a man may purchase 500 rounds of a certain make of cartridge and they shoot finely in his rifle, averaging 2 1/2-inch groups at 100 yards. He uses these up, and buys 500 rounds more, because his second lot came from another case, made on another machine on another day. This is no exaggeration—it happens often.

About the only safe way is to purchase 100 rounds of a certain make from a dealer, try them out at 100 yards with a steady sandbag rest. If they prove accurate (2 1/2 inches or less at 100 yards) go back to the dealer and get 1,000 rounds from the same case the 100 rounds came from.

In a hunt for the most accurate ammunition for small-bore shooting the rifeman should confine his search to the following brands of .22 caliber Long Rifle cartridges:

United States Cartridge Company—N. R. A. Winchester Repeating Arms Company—Precision 200. Remington Arms Company—Palma. Peters Cartridge Company—Outdoor Tackhole. Western Cartridge Company—Marksmen.

### DON'T MONKEY WITH RIFLE CHAMBERS

I HAVE a Krag, Model 1898, and would like to have your advice as to whether or not I could have a piece of the end of barrel at breech cut off so I could use a bullet from 150 to 180 grain pointed so there would not be so much jump from cartridge to beginning of rifling.

We have a garage man in our town who says he can with his lathe cut to within one-thousandth of an inch. That seems pretty fine work. Do you think he could do the job so that size bullet could be used?

C. P., Midland, S. D.

Answer (by Maj. Whelen): The chamber of a rifle is probably the most important part. Any amateur work on a chamber will probably utterly ruin the accuracy of shooting. To show you how important it is, an experienced gunsmith will probably put in over \$250 in time in making a chamber reamer. It would improve your rifle to have it rechambered if you intend to use 150 and 180 grain bullets, but I am very certain that amateur work would practically ruin it.

### IS THE 7 MM. IDEAL?

HAVE been reading about everything to be found in "The American Rifleman," "Out-Door Life," "Outers Recreation," and "Field and Stream," and I seldom see mentioned the 7 mm., which to me seems like an ideal cartridge, especially for the average hunter. We cannot all of us go moose hunting, grizzly and brown bear hunting, and must content ourselves with an occasional trip in the woods for deer and maybe once in a while a moose.

Shooting as I see it, to the rifle lover, is more of a target proposition than anything else, so then why isn't something along the 7 mm. caliber about the happy medium?

I have a Springfield fitted with a Niedner barrel, chambered for the Western 139-grain lubaloy open-point bullet, barrel grooved to a 10-inch twist.

I am writing for your opinion as to what results I will obtain. The standard twist is 8½ inches, designed for the long 170-grain bullet. I do not believe it is possible to shoot both the 170-grain and 139-grain with any degree of satisfaction and, therefore, chose the smaller bullet and the slower twist, and it seems to me that I should have a combination that would fill a long felt want in a sporting rifle.

H. L. W., Dowagiac, Mich.

Answer (by Maj. Whelen): You are dead right about the 7 mm. being a desirable and satisfactory cartridge for the ideal American rifle. It is just exactly the right caliber and power for all American shooting. It is plenty heavy enough for any of our game, including Alaskan brown bear, our largest animal. It is also small enough in caliber to permit of being loaded with a reduced load for any small game. With a fine barrel you have a most excellent weapon. No need of anything better for this country.

I would advise you confining yourself to the 139-grain bullet, open point or full jacketed, with Lubaloy jacket. Use the open point bullet with full charge for big game, and the full jacketed pointed bullet with about 18 grains of Du Pont No. 80 powder for small game. The diameters for these bullets are—minimum .284 in., maximum .285 in. The ones I have had measure .284 in. Bullets made by other companies are jacketed with cupro-nickel give bad metal fouling and injure the bore. I would never fire one of these in your fine barrel. The groove diameter of the barrel to do best work with these bullets should measure .2845 in. Theoretically, for this 139-grain bullet, the twist should be one turn in nine inches. Practically, one turn in ten inches will do very well.

The Western Cartridge Company make a most excellent new factory cartridge for your rifle. It has the following characteristics in a Columbian Steyer Mauser, Model of 1912, with 30-inch barrel:

Bullet, open point, Lubaloy jacket, 139 grains.  
Bullet diameter, .284 in. to .285 in.  
Bullet length, 1.06 in.  
Length of case, 2.25 in.  
Overall length of cartridge, 3.00 in.  
Muzzle velocity, 3000 f. s.  
Muzzle energy, 2780 ft. lbs.  
Velocity at 100 yards, 2778 f. s.  
Energy at 100 yards, 2420 ft. lbs.  
Trajectory at 50 yds. range 100 yds., .75 in.  
Trajectory at 100 yds. range 200 yds., 2.24 in.  
Trajectory at 150 yds. range 300 yds., 5.52 in.  
For other lengths of barrel deduct 25 f. s. from muzzle velocity for each inch less than 30 inches, but I am inclined to think that a 30-inch barrel will give about 3075 f. s. M. V. with this cartridge. With this cartridge and the Columbian Mauser the Western Cartridge Company report accuracy up to 500 yards (their extreme testing range) in every way equal to that given with match ammunition in the Springfield rifle.

The Du Pont Company report the following charges for the 7 mm. cartridge, using a Mauser rifle, barrel length unknown, and U. M. C. 139-grain full-jacketed bullet:

42.8 gs. Du Pont No. 16. M. V. 2796 f. s.  
Pressure 43,300 lbs.  
46.0 gs. Du Pont No. 16. M. V. 3003 f. s.  
Pressure 55,300 lbs.  
44.0 gs. Du Pont No. 18. M. V. 2737 f. s.  
Pressure 41,960 lbs.  
46.0 gs. Du Pont No. 18. M. P. 2950 f. s.  
Pressure 53,600 lbs.

The above is to be used as a guide only. You will not get the same results in the Niedner rifle. The tight chamber in the Niedner will give very much higher pressures, and also higher velocities. The larger charges above will probably be dangerous in your Niedner rifle. Also different cases, primers, and bullets all introduce factors which may give very different results. The above figures were all with U. M. C. components. Work up to your maximum charge a grain at a time. I would estimate that for your rifle the maximum charge with 139-grain Western bullet will be about 44 grains of No. 16 powder, and that you will get therefrom M. V. approximately 2950 f. s. in 30-inch barrel. Western uses Du Pont No. 15 powder in their factory cartridge, the weight of charges depending upon the particular lot of powder. It is of no use to ask the ammunition companies as to what charge of powder to use in your rifle as they have had no experience with a rifle chambered as tightly as I feel sure yours is, and they cannot give you a reply approximating closer than I have.

### BULLETS AND TWISTS

I HAVE a Winchester single-shot 30 Army caliber rifle that I intend to use as a match gun at 40, 60, and 100-yard ranges, reloading my own shells.

In firing this gun I intend to seat the bullet in the barrel instead of the shell casing, loading the latter for the ranges mentioned.

What would be the best kind of powder to use?

How much would be required as a load for above ranges?

In moulding the bullets, what would be the percentage of lead and tin to be used?

What would be the best weight for the bullet at these ranges?

F. B., Delphos, Ohio.

Answer (by Maj. Whelen): To do good work in quick twist rifles using smokeless powder, experience has shown that lead alloy bullets having unprotected bases cannot be fired at velocities much over 1600 f. s., due to the heat of gases at higher velocities melting the base of the bullets and rendering them inaccurate. The diameter of that portion of the bullet fitting to the bottom of the grooves should be not less than .001 inch and not more than .003 inch larger than the groove diameter of the barrel. Bullets should be cast of a hard alloy like one part of tin to ten parts of lead or preferably lead 87 per cent, antimony 9 per cent, tin 4 per cent. The above have been so well established in practice that they have become ballistic principles. With such a bullet weighing about 150 to 160 grains the best powder charge seems to be from 11 to 13 grains of Du Pont No. 75 powder or Du Pont No. 80 powder.

It is hardly practicable to insert such a bullet into the rifling ahead of the case in loading. The bullet is too large and the temper of the bullet is too hard. The bullet, and particularly its base, would be badly deformed in seating it. No good results have been obtained in this manner. The only good results obtained from front seating have been in using paper patched bullets in old-time rifles, in using bore diameter soft lead bullets in old-time slow twist rifles, and in rifles having the throat specially reamed to accurately fit the front seated bullet.

In your case, considering only lead alloy bullets, decidedly better results can be obtained by using a bullet measuring .310 inch (for a bore which has a groove diameter of .308 inch), and seating the bullet in the neck of a properly sized case, but with the bullet projecting further than ordinary out of the case. The seating depth of the bullet should be such that when the cartridge is loaded by hand it cannot be inserted fully into the chamber by finger pressure alone, but the head of the case will refuse to seat completely by about 1/16 inch. Then closing the action forces the cartridge completely in, and forces the ogive of the bullet slightly into the grooves, the lands and the throat tending to straighten the bullet and cartridge up in the chamber, and to bring their axis into coincidence with the axis of the bore. This also insures the passage of the bullet from the case, through the throat, into the rifling with the minimum of deformity. With a good barrel and a load carefully worked up in conformity with the above principles, a good shot, a careful workman, and a man experienced in loading bullets, should average about 3-inch groups at 100 yards.

A better average than the above can hardly be expected from lead alloy bullets, due to the slight inaccuracies and irregularities that are almost sure to be present in the bullets when they are cast by hand. Metal cased bullets are much more regular than moulded bullets, and from good metal cased bullets an expert should

be able to average about 2½-inch groups at 100 yards in a good .30-40 Winchester single-shot rifle.

### THE 25-35

I HAVE your booklet entitled "Cartridges and Loads for American Rifles," issued through the N. R. A., and I find on page 19 a tabulation of 25-35 caliber loads.

Now the 25-35 that I have has a special nickel steel No. 3 Winchester barrel and a heavy Winchester action, so that I believe it will stand nearly every charge that can be put into a cartridge case. The limiting factors of course outside of the actual gun's strength are the light weight and proportion of the bullet itself, and the exceptional short twist of the rifling in this caliber. I believe it is one turn in eight inches. What I want to get is what may be called a Magnum load for this rifle, using a 117-grain soft-point bullet. Object, deer.

The second load that you give, consisting of 25.5 grains Du Pont No. 16 powder gives 2300 F. S. muzzle velocity in a 26-inch barrel. Now my barrel is 30 inches long so I will probably get 2500 foot seconds, but even this velocity with such a light bullet falls far short of the crashing blow a Springfield would deliver.

I would appreciate your advising me what would be the safe maximum load for my rifle with the 117-grain bullet, considering also the element of accuracy. I would prefer using a Du Pont nitro cellulose powder, for it burns cooler and causes less erosion of the bore.

J. M. H., New York.

Answer (by Maj. Whelen): In the 25-35 rifle a load of 26 grains of Du Pont No. 16 powder has been used. The muzzle velocity in 26-inch barrel was 2324 f. s., and the pressure was 38,080 pounds. The air space in the case, not filled by powder, was .125 of the whole. Some little air space is necessary with very small caliber sharply bottlenecked cases, and quick twist. In the development of a heavier charge in this cartridge and Winchester single-shot rifle we are concerned chiefly with the ability of the case to stand the pressure, and the small powder capacity of the case. Pressure would have mounted very rapidly if this charge of 26-grains had been increased.

However, in a single shot action you can get slightly increased powder space by loading with a little more of the bullet projecting out of the case, and you will get better accuracy by this method also. Load your bullets so that when you place your cartridge in the chamber by hand it will not go completely in by about 1/16 inch. On closing the breech block it will be of course forced in easily. By loading in this way I think you should be able to use about 27½ grains of Du Pont No. 16 powder, but I would certainly work up to this charge gradually, keeping close watch on the primers and head of the cases to see that you do not get excessive pressure. 27½ grains and the 117-grain bullet should give a muzzle velocity of close to 2450 f. s. in a 26-inch barrel, or 2550 f. s. in a 30-inch barrel. This will be about your limit in the 25-35 case. Powder charges over 27½ grains will probably result in very rapidly mounting pressures with little relative increase in velocity. More velocity could only be obtained by rechambering the rifle for the .30-40 Krag case necked down to .25 caliber. I doubt if the 117 grain bullet will stand much over 2700 f. s.

### TRACERS AND FOULING

THROUGH the "Dope Bag" column kindly inform me with reference to tracer ammunition: Why Springfield barrels are unduly corroded by its use; what causes the corrosion; what remedy is recommended?

G. R. H., Fort Benning, Ga.

Answer (by Major Whelen): The cause of fouling in Springfield barrels when tracer ammunition is used is the fouling left in the barrel by the ignitor in the bullet. This makes the fouling a trifle abrasive and as a consequence the barrel picks up a great deal of metal fouling. The corrosion in the bore is caused only by an exaggerated amount of the same kind of fouling that you have in the rifle when it is fired with service ammunition. The remedy is a thorough cleaning with water, followed by several thorough cleanings with the standard metal fouling solution to remove the metal fouling.

At Frankford Arsenal we have endeavored to remedy this condition by using tracer bullets with gilding metal jackets and by using Du Pont No. 17½ powder, which has tin incorporated in it. This powder fairly well, the newer ammunition giving very much less metal fouling than the old. The matter of changing the ignitor has also been tried, but this is a very intricate chemical proposition and we might try different ignitors for many years before finally finding one which would ignite the tracer composition properly and yet not give a fouling which would tend to increase the metal fouling in the bore.





## Park Your Gun and Come In=

This tent at Camp Perry is unlike any in other camps—the Happy Hunting Ground for yarn hunters and story trappers. If you have ever shot anything from a mouse to a moose or from a bear to a bulls-eye, come in and join the session. There will be lots of others on hand.

The Western tent at Perry has always been a gathering place for the men who have followed big game from Alaska to the Tropics. You don't have to be a member of the "barrel benders union" to pick up a lot of good range dope or to hear the best offerings of the heavy hitters in the story league.

The old timers know that you can always find the hottest sessions at Western headquarters on Commercial Row. Come in any time; we will try to save a perch for you and your friends.

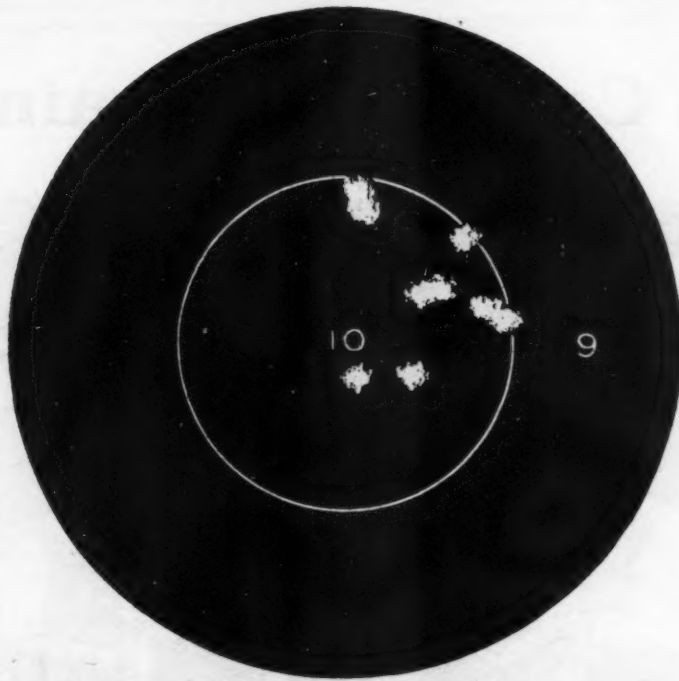
*Interesting exhibits of the exclusive Western developments such as Lubaloy; the non-fouling jacket metal, boat-tail and open point expanding bullets, Marksman super-accurate 22 L. R.'s, and Super-X the famous long range shotgun load will be on view at Camp Perry. If you are unable to see these in person, just send us your name and we will be glad to mail you booklets describing any of these features.*

WESTERN CARTRIDGE CO. EAST ALTON, ILL.

# Western

## AMMUNITION





## How's This For A Group?

Here is a 10-shot "possible" made with US .22 N. R. A. cartridges at 100 yards during the Eastern Two-Man Team Match of the Eastern Small-Bore Championship Matches by Mr. Charles Hankin of the Arlington (N. J.) Rifle Club.

This group is one of the smallest we have seen. It measures  $\frac{3}{4}$  of an inch by 1 inch.

Exceptionally fine targets are made by shooters who use US .22 N. R. A.'s—the cartridges that are accurate, uniform and clean-shooting.

During the National Matches, to be held at Camp Perry, Ohio, the competition in the small-bore events will be unusually keen—many crack shots will be there. While shooting in these matches you will want ammunition that will give you all that you hold for and such ammunition is US .22 N. R. A. cartridges.

### UNITED STATES CARTRIDGE COMPANY

Commercial Row  
Camp Perry, Ohio.

111 Broadway  
New York, N. Y.



**.22 N.R.A.**  
*Long Rifle Cartridges*

# Peter's Cartridges Again Lead!



John Beedle      Jerry Tanner      Frank Wilson, Capt.  
Wilferd Mounts      Howard Clark

## WINNERS OF THE 1923 U. S. SMALL-BORE CHAMPIONSHIP!

The Deerfield Gun Club rifle team with the fine score of 1947 x 2000 is the winner of the 1923 Small-Bore Championship of America.

Every member of this team used Peters Out-Door "Tack-Hole" .22 Cal. Cartridges, showing again "Tack-Hole" superiority. For the man who can "hold" there is no better ammunition in the world.

The members of the Deerfield Gun Club rifle team are engaged in the manufacture of Peters Ammunition, and being producers as well as consumers, they are thoroughly familiar with the shooter's requirements and point of view, with the natural result that particular care is used in every process to insure that the finished ammunition shall be not only of the very finest materials and workmanship, but shall invariably realize the shooter's dream or **absolute uniformity and accuracy.**

Shoot Peters at Camp Perry—on your home range—or in the woods. There is a Peters Cartridge that will answer any and every purpose.

When at Camp Perry ask your representative about our new "Self-Lubricating" metal bullet jackets, as now supplied in our .30-'06 Springfield Cartridges, and other exclusive Peters features. They are the right thing.

**THE PETERS CARTRIDGE CO.**

Cincinnati, Ohio, U. S. A.  
Branches—New York and San Francisco

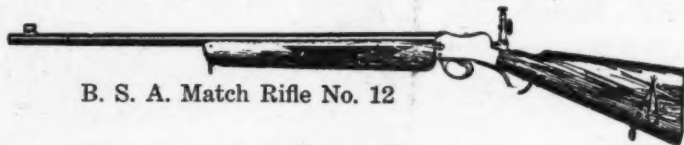


Made by the  
Birmingham Small  
Arms Co., Ltd.

## IT'S THE SAME OLD STORY.

The Name  
Guarantees Quality  
and Accuracy

### The N. R. A. 50 Yard Individual Championship Won with the



B. S. A. Match Rifle No. 12

H. A. Rich, the winner, Pasadena, California, shot a score of  
**398 x 400**

The B. S. A. always proves its value in competition.

#### Shoot the B. S. A. and Win!

All B. S. A. Products—Match Rifles, Air Rifles, Shotguns, Safetipaste—are the highest quality obtainable. Associated lines—Firearms Accessories, Binoculars, Telescopes.

Send for latest illustrated and descriptive literature.

### Production Equipment Co., Inc.

SOLE U. S. REPRESENTATIVES

Dept. 19

91 John Street

New York

Canadian Representatives: Fraser Co., 152 Peel St., Montreal, Canada.



### O'Hare Micrometer for Springfield Rifle 1903

To improve your shooting you require an O'Hare micrometer, a good telescope, and shooting case to hold your telescope stand, rifle rest, sight black, elbow pads and 100 other articles I handle that interest riflemen.

Send 10 cents in stamps for latest No. 6 illustrated catalog, showing over 200 cuts and Price List.

**P. J. O'HARE**

178 Littleton Avenue

Newark, N. J.

### FECKER TELESCOPIC SIGHTS

ready for immediate delivery as follows:

6 and 10 power in 18 inch length,  
Price, \$30.00

6, 8 and 10 power in 22 inch length to  
fit Springfield Rifles  
Price, \$30.00

8 power in 20 inch length  
Price, \$22.50

**J. W. FECKER**

5606 Euclid Ave. Cleveland, Ohio

### INSTRUCTIONS IN LEARNING ACCURATE PISTOL SHOOTING

By Gunnery Sergeant John M. Thomas

Single copies and under ten, fifty cents each. Address orders to: Gunnery Sergeant John M. Thomas, Rifle Range Detachment, Wakefield, Mass.



"MIGNON"

**F. DECKER, 1154 Barry Avenue,  
Chicago, Ill.**

**RIFLE TELESCOPES, \$20.00 up,  
4 x new, mountings all sizes, for any  
style 'scopes, \$5.00 up. Easy to at-  
tach to any make of rifle.**



## 1923 Tournament

of the United Services of New England

Bay State Military Rifle Range

Wakefield, Massachusetts

The Program of the United Services' Meeting, including such outstanding events as the Hayden, Bancroft, Pfaff, and Marine Corps Long Range Trophy Team matches with the score of individual competitions will be fired at Wakefield.

August 20 - 26 Inclusive

For particulars address

MAJ. A. G. REYNOLDS, Secretary

108 Massachusetts Ave.,

Boston, Mass.

## GRIFFIN AND HOWE, INC.

RIFLE MAKERS

234 and 236 East 39th Street, New York City, N. Y.  
Five minutes walk from Grand Central Station.

Have you heard of our new 7 mm. Hunting Rifle? It uses the new Western Cartridge Company cartridges, having a 139 grain, open point, Lubaloy, non-fouling bullet. The muzzle velocity in 26-inch barrel is 2900 f. s. Muzzle energy 2600 ft. lbs. 200-yard trajectory, height at 100 yards 2.2 inches. Accuracy up to 500 yards equal to the best match ammunition in a star gauged Springfield. And the rifle has a nickel steel barrel with taper having compensating vibration, the very finest double micrometer sights designed for hunting, Mauser or Springfield action, splendid trigger pull, steel butt-plate with trap and tools, just enough engraving to take away the plain appearance, matting and checking where they are necessary, and the very finest imported walnut stock you have ever seen. With reduced loads this rifle is small enough for the smallest game. With the full charged cartridge it has all the excellent killing power that characterized the .280 Ross cartridge. The recoil is insignificant. It is the coming rifle for American big game. Send postal for circular.

## WANTS AND FOR SALE

The uniformly excellent returns from advertisements appearing in the classified columns of THE AMERICAN RIFLEMAN make it a most satisfactory and productive medium for the disposal of surplus shooting equipment, or the acquisition of special types of firearms.

**Free Insertions.** Each subscriber is entitled to one insertion of one-half inch, when his subscription is paid up for one year. It is necessary only to write or print the text plainly, noting thereon the date subscription was paid. These advertisements will appear in the first available issue and should be in the publication office two weeks prior to the following publication date.

**Paid Insertions.** Non-subscribers or those who have already made use of the subscriber's privilege may take advantage of these columns at a cost of \$1.00 per inch or part thereof. No advertisement for less than \$1.00 accepted. Advertisements will be set in 6 point solid. They should be in the publication office two weeks prior to the time appearance is desired.

**SPRINGFIELD REMODELING OF THE HIGHEST ORDER. HAND-MADE STOCKS OF THE FINEST ITALIAN AND CIRCASSIAN WALNUT, AS YOU WANT THEM. ENGLISH MADE ANSON & DEELEY EJECTORS. SCROLL AND FLOWER ENGRAVED. TO YOUR ORDER IN FOUR MONTHS.**

OWEN BROS., SAUQUOIT, N. Y.

**ANTIQUE AND MODERN FIRE-ARMS** (new and used) sold, exchanged, and bought. Large stock—reasonable prices! Stephen Van Rensselaer, 873 Madison Avenue, New York City.

**HAND LOAD** your shells with **BOND TOOLS.**

**CATALOG AND HANDBOOK** mailed on receipt of 10 cents.

MODERN-BOND CO.

813 West 5th Street  
Wilmington, Del.

**FOR SALE OR TRADE**—1 Winchester Single Shot Rifle Barrel. Has never been fired. 1 Spring 'Scope, for Single Shot Rifle, as put out by the Sportsman's Accessory Company. The barrel and 'scope is worth on today's market about \$20.00. Will exchange both for Stevens off-hand Diamond model target gun, 8-inch barrel preferred, 1 Lyman peep sight with target disc. E. W. Leech, Gaffney, South Carolina.

**WANTED**—Longer barrel for 1897 Winchester 12 gauge, solid frame, riot gun, or will sell the gun cheap. S. F. Skidmore, Bayonne, N. J.

190

AMERICAN sportsmen's almost criminal negligence made possible new fanatical laws curtailing our most cherished personal liberties. Would our humiliation not become intolerable if we let these cooties on our body politic DISARM us. Telling you again. Carrying 200 real guns for your convenience. Charging you but 10 per cent. That's SHIFF the GUNMAN, N. Woodstock, N. H. Ship your stamp and see inside.

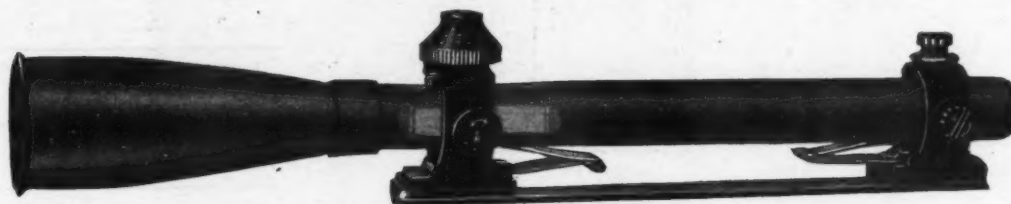
**FOR SALE**—Handy Scales \$4.50, postpaid. As written up in July 1, 1923, number of "The American Rifleman," page 24. Homer Gun Store, 40 Commercial Ave., Binghamton, N. Y.

**FOR SALE**—1 Caliber .45 Colt Single Action, 5½-inch barrel, fancy walnut, checkered grips, new, never fired, \$25.00. 1 Stevens Pope Ballard, caliber .33-40 Muzzle Loader No. 3—32-inch half octagon barrel, fancy engraved pistol, grip action, double set trigger, complete with muzzle loading outfit with mold, shell resizer and powder measure. All like new, \$50.00. 1 caliber .33-40 Winchester Pope Barrel only for Ballard Action No. 5—32-inch half octagon breech loader, like new on the inside, bluing worn off on the outside, \$15.00. 1 Single Trigger Ballard, plain finish, caliber .44-40, practically new, \$15.00. 1 Double set trigger Ballard action only. Plain finish, straight grip, Pope, hand-made Schutzen stock, needs new main spring and rear spring, \$18.00. 1 Sporting Springfield, fine sporting stock Lyman sight on bolt, new condition, \$50.00. 2,000 empty .30-40 Krag shells, Frankford Arsenal make, in good condition, fired once, \$10.00 for lot. 1 .30-06 Newton tool complete, \$4.00. 1 case, 1200 P. A. cartridges in original steel container, \$16.50. 1 case 1200 Remington .30-40 cartridges loaded with number 17 du Pont Powder, \$10.50. All prices F. O. B., Minneapolis, Minnesota. J. J. Turner, 2419 16th Ave., So., Minneapolis, Minnesota.

**FOR SALE OR TRADE**—Union Hill Ballard, plain trigger, pistol grips, cheek piece and Swiss butt, 24-inch No. 3 full Octagon barrel, .22 L. R. new, No. 103 Lyman rear, Globe target front with spirit level, Scope blocks. In excellent used condition and accurate. Take \$20.00 or 5-A Scope. Scope must be perfect or Model 52. Frank Ridgway, 512 West 6th St., Peru, Indiana.

## The Scope

Universal Focus - Large Field - Great Light - Long Eye Relief



Made by shooters for shooters

Manufacturers of Universal Focus Telescopes for Hunting, Mounts calibrated in yards and Adapting Appliances.

A catalog will help you to determine whether the ideas of our designer (Mr. W. S. Belding), as to what constitutes a good scope, coincide with yours.

**Belding & Mull**

Philipsburg, Centre County, Penna.

### Your Gun Is Worth Good Care



Ask any sporting goods dealer or expert gun or rifle-man how to clean a gun. He'll tell you that **HOPPE'S NITRO POWDER SOLVENT NO. 9** is the safest thing to use. It removes rust, destroys the corrosive effect of nitro powders and keeps your firearms in good condition always.

You can get Hoppe's Nitro Powder Solvent No. 9 at your favorite sporting goods store or we'll send you a liberal sample for 10c. Try it now. **FRANK A. HOPPE, Inc.**  
2314 N. 5th St., Phila., Pa.

**"Clean as a Whistle"**  
**MARBLE'S**  
Cleaning Implements  
make it easy to have a clean gun.  
**Jointed Rifle Rod**  
When screwed together it's as solid as a one-piece rod—can not wobble, bend or break. A brass section, 2 steel joints, steel swivel at end, 26, 30 and 34 in. long. State length and caliber. \$1.25  
**Rifle Cleaner** Thoroughly cleans without injuring finest rifle—removes all lead, rust, powder residue. Softest brass gauze washers on steel wire—may be attached to any standard rod, 60c. State caliber wanted.  
If your dealer can't supply you, order by mail.  
**Marble Arms & Mfg. Co., 522 Dea. Av. Gladstone, Mich.**

### FAILA PAT. SLEEPING BAG

Be Comfortable Without Weight or Bulk

Llama Wool, interior bag  
3 lbs. 6 oz. .... \$31.00  
Aeroplane Cloth Cover, 20 oz. .... 8.00  
Complete Bag, 4 lbs. 10 oz. .... \$39.00  
**Faila Pat. No-Hide-Fur**  
80 inches long, complete bag, wt. 5 lbs. 10 oz. .... \$25.00  
Scout Size, 66 inches, wt. 4 lbs. 7 oz. .... \$26.00  
Double Bag for 2, weight 8 lbs. 12 oz. .... \$45.00  
**Faila Tropical Tent**, insect reptile proof; all-round ventilation 7½x7½x10. \$85.00  
Complete equipment for Travelers, Hunters, Explorers and Engineers

**FAILA OUTFITS, Inc.**

Anthony Faila, Pres.

25 Warren St. NEW YORK

**WANTED**—Second hand .250-3000 lever action Savage rifle. Condition of barrel immaterial, action must be in good condition. W. A. Stolley, 612 Spruce St., Dowagiac, Michigan.

**SELL**—Krag cut to sporter, sling, fine, \$18.00; 1903 Win. Auto. peep sights, rust rope, case like new, \$29.00; 14-A Remington .30 cal., peep sight case like new, \$37.00; Ross military, .303, stock trimmed down and refinished, sling, never fired, 3 boxes shells, \$20.00; Luger .30 cal., 4-inch barrel, never fired, \$20.00. Trade any of above for 24-A or 12-C Remington, model .38 Marlin, Savage .22 sporter or model 25 Remington. Will also trade for shotguns. Boot where boot belongs. Also 3-30 Heddon reel outfit, jeweled bearings, \$29.00; South Bend level wind anti-backlash, \$18.00. Both brand new. Scott, 52 Water St., Aurora, Illinois.

**FOR SALE**—1 Springfield .06 Sporter, beautiful black walnut stock, checkered, King rear and front sights, A-1 shape inside and out. Price, \$50.00. 1 Carl Zeiss 6x30 Silvamir binocular with stiff leather case and shoulder strap, extra clear and fine glass, A-1 shape. Price, \$55.00. Charles Hoffmeister, Imperial, Neb.

**FOR SALE**—Stevens Ideal No. 45 with 28-inch .25-20 s. s. barrel and brand new Peterson 30-inch .22 L. R. target barrel, capable of very small groups. Outfit perfect and cost \$60.00. First remittance of \$35.00 gets it. Walter Oakley, Jr., Salem, Va.

**WANTED**—Ideal No. 4 tool for .32-20 cartridge. Also Bond .30-06 tool. H. Hewins, 30 Hill St., Dubuque, Iowa.

**LYMAN SIGHTS**  
FOR EVERY PURPOSE AND EVERY GUN  
Leaders for Forty Years  
Write for Booklet  
**Lyman Gun Sight Corp.**  
Middletown, Conn.

**FOR SALE**—One Newton straight line loading tool, one Ideal No. 5 powder measure, 1000 primers, 1000 Service Bullets, 1 can of powder, 1 adapter, lot \$17.00. One Remington target rifle with peep-rear-sight and Mann-Neidner taper blocks. Sling strap canvas case, cleaning rod, 1000 .22 L. R. cartridges. Rifle in new condition and threaded for silencer. Lot \$20.00. One .22 Colt Automatic, threaded for silencer. Andrey Spring holster, maxin late model Silencer, new condition. Lot \$30.00. One .45 Colt Automatic, new, store model, Andrey Spring holster and belt, 2 extra clips and belt case, 300 cartridges, Dotter practice rod. Lot \$32.00. One Winchester 5-A Telescope sight with leather case to fit .22 Remington Rifle. 1 "Ottoway" telescope, with two eye pieces for 32 and 40 power, 1 stand for same, 1 leather box for .22 cartridges. Everything new. Lot \$50.00. Joseph Spolarich, 210 Ruby St., Joliet, Illinois.

**FOR SALE**—Sav. 1920 bolt .300 cal., like new, and reloading tools, \$45.00 cash. Miles O. Noll, Lewisburg, Pa.

**THE CULVER MILITARY ACADEMY** is building a large indoor gallery which will contain fifty targets. We want this to be the best gallery in the United States. Suggestions with reference to construction will be appreciated. If you have any ideas which you consider a little better, let us hear from you. Address all communications to Lt. Col. Basil Middleton, Culver Military Academy, Culver, Indiana.

**FOR SALE**—30-06 Winchester take down Gold Bead and Lyman peep sights—169 cartridges—\$45.00. Address 1737 Fourth Ave., Oakland, California.

**FOR SALE**—Winchester .22 Long Rifle Model 87. Mounted with Stevens Telescopic Sight. A-1 gun crank condition. \$40.00. W. J. Woodruff, 3105 Riverside Ave., Cleveland, Ohio.

**FOR SALE**—.30 cal., star-gauged Springfield, new pistol grip stock, sling and sight cover, perfect condition, \$30.00. 5x7 Premo camera outfit, \$25.00. Pair of 10-inch condensing lenses, square mount, \$25.00. Chas. Wale, 604 Camp St., Louisville, Kentucky.

**TRADE**—Colt .45 Automatic, perfect inside and out, leather holster and belt, and leather container holding two extra magazines. WANT .52 Winchester in exchange. Must be in perfect condition. Maximilian Toch, 110 E. 42nd St., New York City.



**FOR SALE OR EXCHANGE**—Turner-Reich 6 X prism binoculars, 20 mm. objective, with leather case and straps. Most compact 6 + glass on the market. WANT .250-3000 or .300-bolt action Savage or Model 52 Winchester. Will pay small difference if gun warrants it. G. Walter Booth, Second National Bank Bldg., Akron, Ohio.

**FOR SALE OR TRADE**—Parker Bros. Single Trap Gun, C. S. grade, 34 inches x 14 inches x 2 1/4 inches weight, 8 lbs., perfect condition. Price, \$120.00. Cost \$175.00. Will take .30-06 National Match Springfield, as issued, or Sporter, in like condition, as part payment. H. D. Robbins, 1142 Hamilton Ave., Trenton, N. J.

**FOR SALE**—250-3000 Lever Action, Savage, new (loaded), 200 cartridges. Ideal tool and bullet mould, \$55.00. Colt's .44-40 S. A. Frontier belt and holster, perfect, \$30.00. Would consider Remington No. 25, .32-20 Winchester 1912, Model 20 ga. or Savage .22 Sporter in trade. Must be perfect. L. A. De Boer, 4135 Ellis Ave., Chicago, Illinois.

**FOR SALE**—Barrel and action only of Krag Carbine, in good condition, with complete extra bolt and several other extra receiver parts. \$5.00. 5 X Stevens telescope sight, short model, with Stevens Micrometer Mounts. Needs cleaning, otherwise in good shape, \$10.00. 1000 bullets of .25-36 caliber, and 400 of .25 Remington caliber, cupro-nickel jacketed, soft point in original boxes. \$7.00 the lot. Robert McCrae, 3943 Lake Ave., Rochester, N. Y.

**FOR SALE**—New .300 Savage Bolt Action Rifle with No. 34 Lyman Windgauge Receiver Sight \$40.00, new 30-inch barrel for .30-06 Springfield, \$8.50. New barrel for Stevens Favorite .25 caliber rim fire, \$4.00. Also one Winchester mould for .38-40 for \$2.00, one Ideal mould No. 32360-175-grain bullet for \$1.50. One mould .321. sharp point for \$1.50. W. Rohrbacher, 851 E. 6th St., Erie, Pa.

**WANTED**—Bisley Model Colt .38 caliber, 6 inches or longer barrel. Give full information in first letter. Geo. Titherington, 1321 S. American St., Stockton, California.

**EXCHANGE**—Bisley Model Colt's Target .44 Russian, fine condition, for a S. A. Colt's .44 short barrel or D. A. Colt's or S. & W. .44. Must be in good condition. Scott Ellett, 816 So. Pasfield St., Springfield, Illinois.

**FOR SALE**—Model 1917, caliber .303 Lee-Enfield Rifle, very fine, \$25.00; .30-40 Krag Carbine. Has seen use but in very good shooting condition. \$10.00. .303 Ross Rifle, in good condition. \$10.00. S. K. Hesh, Box 462, Manor, Penna.

**BARGAINS**—Fine 40-power Vion Spotting Scope, like new, \$20.00. Cost \$21.00. 1000 rounds .30-06 Remington, 150 gr. bullet, in original case. No junk. Make offer. G. A. Nyman, 1220 Revell Ave., Rockford, Illinois.



### HOFFMAN'S BLUEING SOLUTION DID THE WORK

"Do you see how perfectly that barrel is 'blued'? Well, Hoffman's blueing solution did the work."

A scientific preparation with a money-back guarantee. You can do the work at home in twenty minutes. If your sporting goods dealer cannot supply you send his name and \$2.50 direct for 4 oz. bottle—enough for six guns.

HOFFMAN CHEMICAL CO.

610 Nat'l City Bldg. Cleveland, Ohio.

**TRADE**—30-30 Winchester Rifle, Model 94. Shot 50 times, in perfect condition, for rifle shooting Springfield .30-06 cartridge. C. T. Fricke, 1626 Loveland Ave., Springfield, Illinois.

**FOR SALE**—.35 Remington Automatic, perfect inside, pistol grip. Blue worn some from saddle scabbard. Fired about 50. Shots. \$35.00. One .45 Colt, new, extra clip, \$20.00. W. B. Wallace, Belgrade, Montana.

**FOR SALE**—Extra barrel for .22 caliber B. S. A. Match Rifle No. 12, regulation size. Rifling is sharp, no pits, perfect condition, tapped for scope blocks, satisfaction guaranteed. \$10.00. Wilson E. Conner, Terre Haute, Indiana.

**FOR SALE**—One .30-06 Newton, Silvers recoil pad, receiver sight, telescope mount bases, perfect condition, \$35.00. One Model 1895 take-down Winchester, .30-06 caliber, perfect condition, \$35.00. One Police Positive Colt Revolver, caliber .32, perfect condition, \$17.00. First money order. James A. Clark, 624 Cone-wango Ave., Warren, Pa.

**FOR TRADE**—Air Sleeping Bag, in new condition for Colt .45 caliber Auto. Pistol or Savage N. R. A. .22 caliber long rifle, in first-class condition. H. B. Morris, R. D. No. 3, Box 234-D, Tacoma, Washington.

**FOR EXCHANGE**—One .30-06 Springfield U. S. Rifle, in fine condition, for Model 1922 U. S. .22 Long Rim, like condition, or Model 52 Winchester. G. D. Willis, Secy. Del Rio Rifle & Pistol Club, Del Rio, Texas.

**WANTED**—Frame and grip of Smith & Wesson Single Shot .22 caliber Target Pistol of original 1891 model. Condition immaterial but must be in working order. H. H. Lelzear, c/o "The American Rifleman."

**TRADE**—Krag sporting rifle remodeled, full pistol grip stock of figured walnut, 25-inch barrel, Lyman sights, gun in perfect condition for Springfield .22 L. R. late model, as issued. Must be in perfect condition inside and out. Chan. R. Martin, Drawer S, Henry, Illinois.

**FOR SALE**—All in A-1 condition: Winchester 53, \$52.40. Colt .22 W. R. F., \$15.00. Winchester B-3 Scope, \$12.50. Ideal Reloader .32-40, No. 3, \$3.00. Ideal Resizer, No. 5, \$5.00. O'Hare Micrometer, \$3.50. Nearly complete file "Arms and the Man," Vol. LXII to Vol. LXXVIII, at 15 cents per copy. L. E. Perry, 2007 Baker Ave., Utica, N. Y.

**FOR SALE**—New Winchester 20-gauge pump gun. Absolutely perfect factory condition. Shot only 12 times. Cost \$51.00. Will take \$47.00. R. D. Fisher, 602 Atlas Bldg., Columbus, Ohio.

**FOR SALE**—One Winchester S. S. Musket, .23 L. R. with Winchester 5-B scope, also adjustable tang peep and aperture and post globe front sights. Very accurate. Price, \$50.00. One Officer's Model .38 special Colt's Revolver, target sights, complete reloading outfit including quantities of smokeless powder, caps, empties and about 1500 balls Good holster. Price, complete, \$50.00. Both guns are in the best of condition. \$95.00 takes both. John T. Iversen, 801 Cherry St., Grand Forks, North Dakota.

**FOR SALE**—One Ithaca hammerless 20-gauge. One Marlin .30-30, light weight, fine. One Remington Hepburn .25-21 cal. One Colt's New Service .45, 5 1/4-inch, like new. One Mauser Pistol .30 cal., good. One Luger Pistol .30 caliber, new. One S. & W. Hammerless Revolver .38 caliber, 6-inch nickel. WANT 16 ga. shotgun, .50 Remington pistol. Oluf Bearrood, R. 2, Luck, Wisconsin.

**FOR SALE OR TRADE**—.38 S. & W. Safety Hammerless, nickel, refinished, absolutely perfect, \$21.00, or Colt S. & W. .22 revolver. P. Haugsaurd, 2112 W. 6th St., Duluth, Minnesota.

**TRADE**—8-power prism binoculars in new condition. WANT 30-power spotting scope with two-inch objective lense, in same condition. G. A. Wahlstrom, Whitehall, Michigan.

**FOR SALE**—Match Springfield, .256 Newton, 250 Savage Bolt, Newton Peep Sight. All new. Owen Kintner, Wenatchee, Washington.

**FOR SALE**—Muzzle loading hunting rifle percussion, under hammer, 20-inch octagonal barrel, fine inside and out, fancy inlay patch box and cap box, about 34 cal., flat mainspring broken, \$10.00. No mould. Fine cap and ball Colt, .44 caliber, 8-inch barrel, engraved cylinder of Naval engagement, new condition inside and out, except some bluing off on barrel. Mould, .400. New and absolutely perfect Remington cap and ball, 6-shot, 8-inch barrel, no mould, \$8.00. Fine double barrel muzzle loading shotgun, 34-inch barrel, engraved locks, percussion. Fine inside and out, \$6.00. Francis W. Greens, Claremont, N. H.

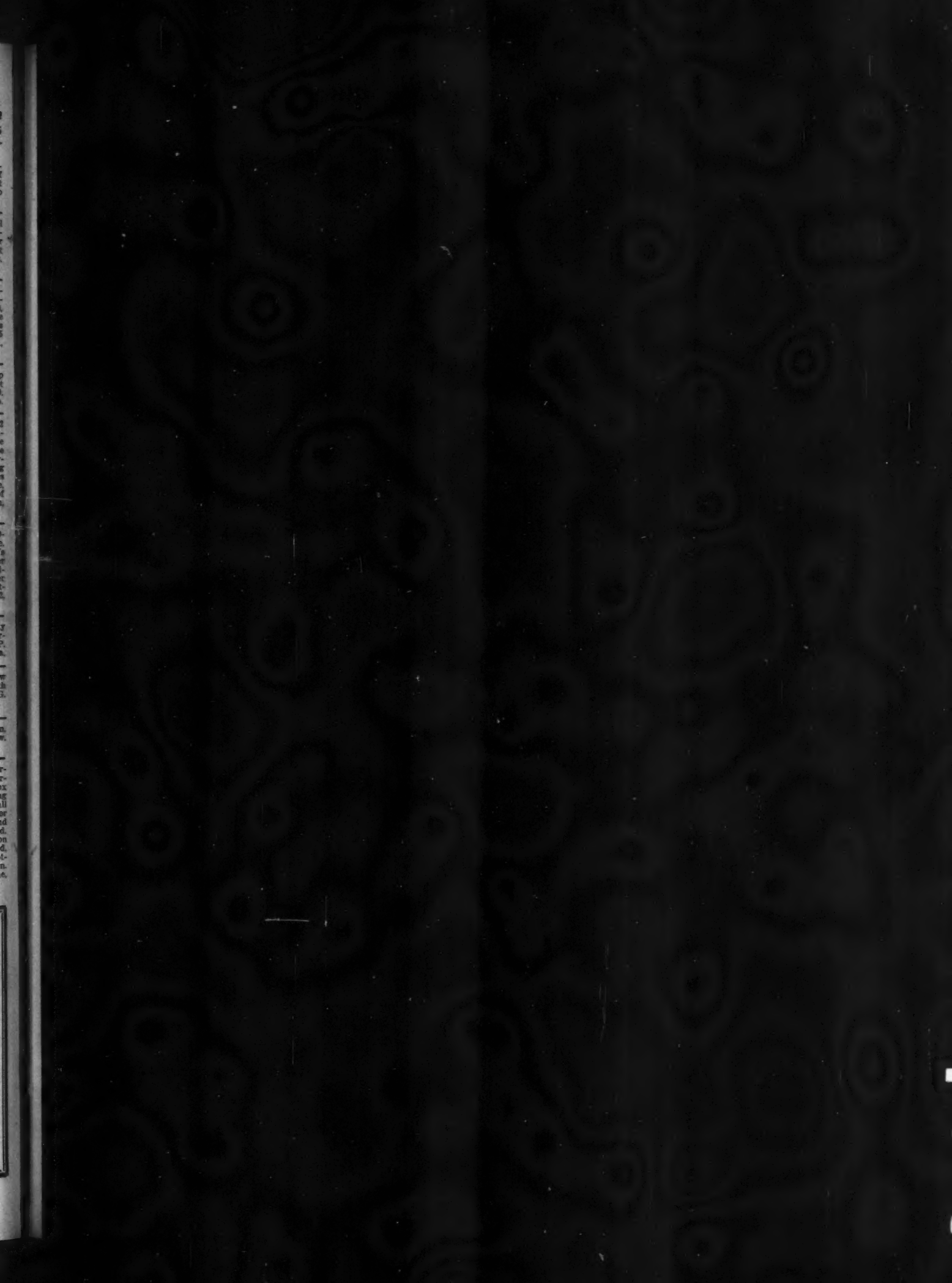
## SUBSCRIPTION TO THE AMERICAN RIFLEMAN

Enclosed, find \$\_\_\_\_\_ for my subscription to "The American Rifleman," beginning with the \_\_\_\_\_ issue.

Name \_\_\_\_\_ Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

Subscription \$2.00 per year to individual members of the NRA; or its affiliated clubs; \$3.00 per year to others.

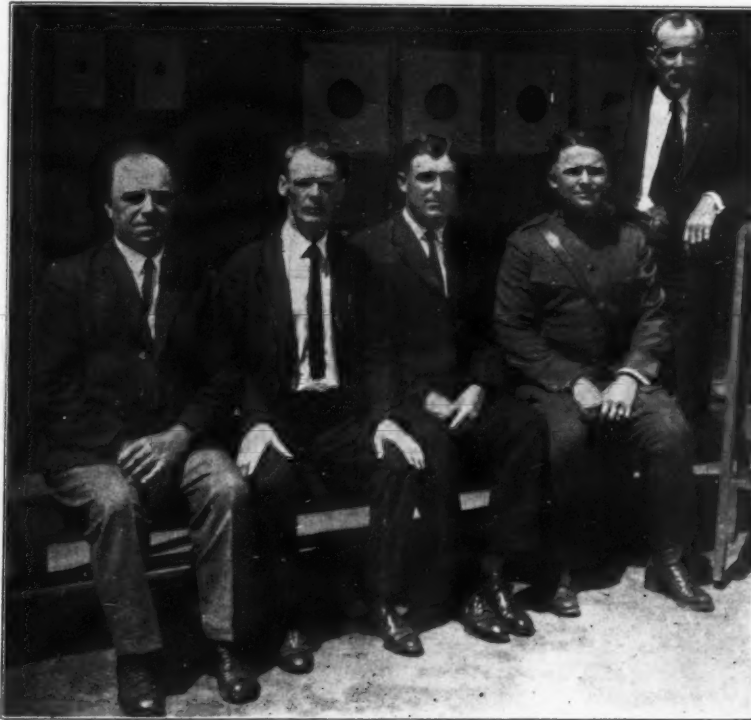






# Another World's Record Broken!

Here is the  
Frankford  
Arsenal Team  
That Did the  
Trick

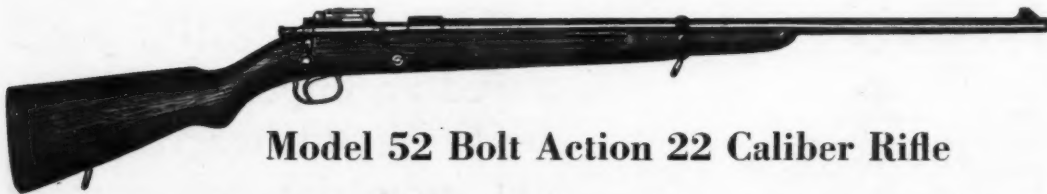


Left to right:  
A. Eisenhower  
C. Johnson  
C. Hogue  
Capt. R. Bowlin  
J. Terry (Coach)

THIS TEAM SHOOTING IN THE PALMA TEAM MATCH AT SEA GIRT ON JULY 4TH  
ROLLED UP A SCORE OF 888 POINTS OUT OF A POSSIBLE 900; A WORLD'S RECORD.  
THREE OUT OF THE FOUR MEN USED THE

## WINCHESTER

TRADE MARK



**Model 52 Bolt Action 22 Caliber Rifle**

Besides the Palma Match the Model 52 won the following in the Eastern Small-Bore Championships:

50 yards Re-entry  
50 yards Timed Fire Re-entry  
100 yards Re-entry  
200 yards Re-entry  
Moose Match  
Eastern Small-Bore Individual  
Individual Grand Aggregate

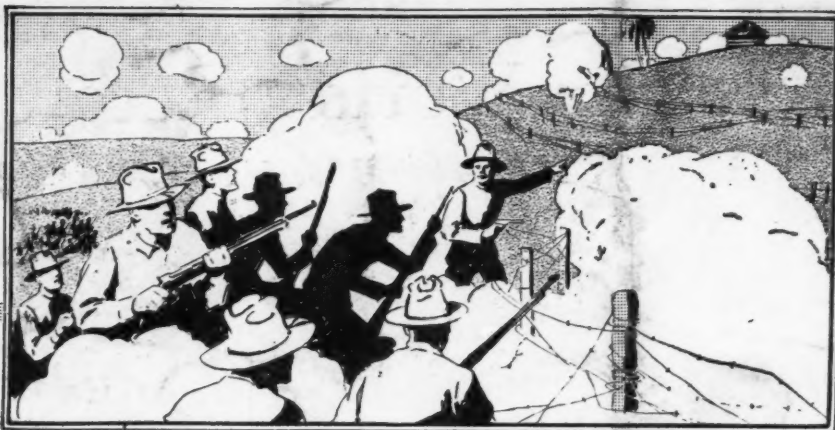
1st two places and high aggregate score  
1st place  
1st place  
1st four places and high aggregate score  
1st three places  
2nd place  
1st place

WRITE FOR FOLDER ON THE MODEL 52 TO THE

# WINCHESTER REPEATING ARMS CO.

NEW HAVEN, CONN.





## With the Rough-Riders at San Juan

**W**HEN Roosevelt and his Rough-Riders stormed the defenses at "Kettle Hill", service to the government had been a recognized duty of the du Pont Company for over a century.

Du Pont Explosives have played an important part in the battles and the agricultural and industrial development of the nation since 1802.

*In 1802, practically all du Pont powder was made for army and navy. Today less than 2% is used for military purposes and over 98% for the uses of industry.*



E. I. DU PONT DE NEMOURS & CO., Inc.

Military Sales Division  
WILMINGTON, DELAWARE

**DU PONT**

